Flat Culture.

FOR a number of years there has been a diversity of opinion in regard to two strongly contrasted modes of culture, the one termed *flat culture*, and the other *hilling*, the distinguishing feature of the first consisting in leaving the surface of the soil level, that of the latter consisting in drawing masses of earth up to the plants in the form of hillocks or ridges, according to the mode of planting adopted. As usual, something may be said on both sides of the question. Judge Buel, we believe, was among the first to give a special direction to the system of flat culture, and since his day it has made very considerable progress among a large class of intelligent cultivators. The subject may be thought to pertain more generally to the farmer, and somewhat out of place here; but we are far from regarding it in that light; it concerns all who have a kitchen garden, however small. The kitchen garden, in our estimation, is no mean thing, to be put aside in a corner, and spoken of contemptuously; it contributes essentially to the necessities and pleasures of all, and deserves a more prominent place than it has heretofore occupied. In the garden, moreover, have been initiated most of the improved modes of culture that have added so much to the productive industry of the land. The garden is the school in which our best lessons are learned; and the principles there demonstrated, when judiciously and intelligently applied to the broad surface of the farm, give us our best results.

Culture, then, be it flat or otherwise, concerns the gardener even more than the farmer. When our attention, many years ago, was first called to the subject of flat culture, we determined to give it a fair trial by the side of the common system, noting carefully time, labor, and general results. We began with corn, then beans, next potatoes, etc., and with results so satisfactory, that we at last adopted the principle of drawing earth up to no plants, except for the purpose of blanching. After considerable experience, we do not hesitate to give "flat culture" a distinct approval. It is the system for our dry atmosphere, warm sun, and frequent droughts, as the hilling system may be the best for the moist climate and wet soils of England, especially where those soils are undrained. Both systems have their advocates, those of the hilling system preponderating; but the other is making its way slowly, but surely, and we have no doubt it will at no distant day meet with a hearty approval throughout the country. The advocates for "hilling" principally claim that it "retains moisture," "decreases the evaporation," and "strengthens" the plant, but how they do not

explain; but we question the truth of these points. It is manifest to us, and it accords with observation, that a plot of ground with a level surface kept well pulverized, will retain a more uniform degree of moisture than one broken into hills. It is precisely in a time of drought, when we are dependent upon the small amount of moisture contained in the atmosphere, that the advantages of "flat culture" make themselves manifest. The leaves of plants condense the moisture of the atmosphere, and in different modes shed it on the ground, but principally by means of the stalk. Now if we take corn, for example, which has been hilled, this moisture, so much needed, is thrown off from the plant, and very little is absorbed; in fact, these hills and ridges make good water-sheds, and, becoming baked during dry weather, lose the power of absorption. Where "flat culture" prevails the soil can always be kept open and porous, and its absorbent powers more fully retained. In regard to "decreasing the evaporation" by hilling, it is so transparent that evaporation is increased by the operation, that we leave that point without further comment for the present. It is well understood that hilling and ridging were introduced to get rid of surplus moisture. Hilling, also, it is said, "strengthens" the plant, the word being generally used in a mechanical sense; for example, it is contended that corn, when hilled, is less liable to be blown down. We know, however, that such is not the fact; and, so far as maintaining an erect position is concerned, facts are all in favor of flat culture. Paradoxical as it may seem to some, corn that has been hilled will blow down sooner than that which has not; and when both are down, that which has been grown by flat culture will soonest and more fully recover itself, because it has less resistance to overcome.

But we must now be content with stating what we conceive to be the advantages of "flat culture" as compared with "hilling," leaving details for another occasion; these advantages are principally the following: It demands less labor for a given amount of results; it admits of a more thorough cultivation of the soil; it lessens the evils of drought; it admits of the continued use of the best improved implements of culture; and, not among the least of its claims, it presupposes a thorough preparation of the soil, such as drainage where needed, deep plowing, thorough stirring of the soil, etc. Hilling, undoubtedly, has its place and its advantages, and these are chiefly found in a moist climate and a wet, heavy, undrained soil. Flat culture, we think, will prove the system for our climate, and improved modes of culture. Let it be more commonly tried, and adopted as its advantages may seem to warrant. We should be glad, too, to see it more frequently in our gardens, for those ever-recurring hills and ridges are nothing but an offence to good taste and neatness. If any shall find it not to possess the advantages claimed for it, they can fall back on the old system again. If, however, it has advantages, it is due to the progress of the age that they should be generally known.

CULTURE OF THE CINERARIA.

BY JOHN EGAN, NEW BRIGHTON, S. I.

As a winter and early spring-blooming plant, the *Cineraria* deserves special attention; for when properly treated it never fails to attract and to excite pleasure in the mind of every lover of flowers by the brilliancy of its

colors, profusion of bloom, and extensive variety, which, with the simplicity of its culture, ought to be sufficient inducement for every one possessing the means of keeping plants, to cultivate them. Many gardeners will no doubt consider anything which may be said on the culture of Cinerarias as hackneyed, but to amateurs these remarks may prove interesting.

Save seed from the most distinctly marked and best colored plants of neat habit. The best means of attaining this object is to allow the plants to remain in the greenhouse, to perfect their seed; to this end the plants should be shaded from intense sun, and the seed should be gathered in two or three days after the petals decay. The plants are then almost worthless, and may be thrown away, except some unusually fine variety, which you may wish to perpetuate; old plants, however, never make such vigorous growth as those grown anew from seed.

Sow the seed early in September, in a bed of light sandy loam, in a shady situation, and protect the plants from extreme moisture. When they attain a size so as to be easily handled, pot them off into three-inch pots in a compost of leaf mould and sand, and remove to a cold frame in a shady situation, protected from extreme heat, cold, or moisture, until the roots begin to show at the bottom of the pots, when they should be immediately repotted into six-inch pots, using a small portion of loam and decayed hotbed manure in the compost, and removed near the glass. This is one of the important things in growing Cinerarias. In about four weeks, if properly attended to, they will need their last repotting in pots of at least 10 inches diameter; compost the same as at the second repotting. As they progress they should be frequently syringed, and watered with guano in solution. If it is necessary to fumigate with tobacco, it should be applied weak, otherwise there is danger of injuring the leaves, which to preserve well is one of the chief objects. The temperature may attain to 70 degrees and be of benefit if the atmosphere is humid. In raising Cinerarias, one desirable object is to prevent them from being drawn, which will be the case if not kept near the glass, and frequently turned to keep them in proper shape. By these means you will have fine plants sufficient to sustain themselves without a number of sticks, which spoil their appearance.

[We are obliged to Mr. Egan for his sensible remarks on the Cineraria. It is just such practical articles that we most need, and we shall be glad to hear from him often.—Ed.]

NOTES ON NEW AND SELECT PLANTS.

BY DANIEL BARKER, SPRINGFIELD, MASS.

Dianthus Verschaffettii.—This remarkable and beautiful plant is now unfolding its lovely flowers for the first time, not only at this establishment, but in this country. It originated at the establishment of H. Hirschback, in Prussia, and was sent out by E. G. Henderson & Son, London, for the first time this spring. The description given by the Messrs. Henderson I fully concur in, and can not do better than give it in their own words:

"It forms a neat and compact half shrubby plant, densely branched habit of growth, from nine to twelve inches in height.

"The flowers, in their general aspect of growth, resemble a large specimen

of the florist's varieties of pinks, as grown for competition, but differ in showing a single expansion of flower lobes rather than of double petal series, and each entire blossom being from two to three inches in diameter; while the entire series of petals, instead of all combining to form a single blossom with the usual dark ray or centre, as is the case in the varieties above quoted, in the present example range themselves into a series of colored spots at the base, converging to a crimson belt or zone, and together forming a large aggregate cluster or flower-head. The arrangement of these concentric series of picturesque petal rays within one simple base or crown, forms one of the most novel and singular combinations yet known in gardens. The pure white ground color of this variety will form a desirable contrast with the warmer and higher petal tints of 'Dianthus Heddewigii' and its allied species, and will be found a valuable addition for greenhouse decoration in spring, and equally adapted for the open borders in summer."

The specimen sent for your inspection, you will not fail to observe, agrees with the above description in every particular save diameter of flower, which, being taken from a plant so recently imported, is naturally not so fine as the succeeding flowers will be.

A beautiful and life-like figure is given in the *Illustrated Bouquet*, plate 36.

Gazania Splendens.—This rare and beautiful evergreen summer bedding plant continues to unfold its lovely flowers at this establishment. This will undoubtedly become one of the most popular bedding plants ever introduced to this country. Its neat and unique habit of growth, combined with the rich colors of its numerous flowers, produces a very ornamental effect, quite unlike any plants we yet possess for bedding purposes. Not only is it well adapted for beds upon the flower garden, but for pot culture it will be found a most valuable acquisition. The description of the flower, as given by E. G. Henderson, London, I cheerfully endorse, as being truthful in every particular, viz.: "Flowers very numerous, of a golden yellow color, from three to four inches in diameter, picturesquely marked at the base of each petal with converging cloud-like spots of a rich dark brown chocolate tint upon a black base, and these are again marked with white spots upon their disc or surface.

"The union of these rich colors produces a highly ornamental effect in blossoms of such unique and gorgeous hues, which, when fully expanded, produce an effect so brilliant that the most accurate description fails to convey an adequate impression of their beauty."

A most accurate figure of the above fine plant is given in part 7 of the *Illustrated Bouquet.*

Pyrethrums, *Vars.*—New and valuable hardy herbaceous perennials. The varieties from which the enclosed flowers were taken were obtained by Mr. Bliss from the continent of Europe, and are *perfectly hardy*, having withstood the late winter without any protection; as such they will be found very valuable additions to this most useful class of plants.

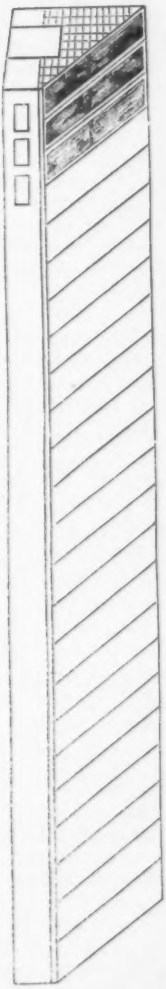
The subjoined list contains the names of the latest new varieties, and the best in cultivation:

Duchesse de Brabant—Rich rosy crimson, bright yellow centre.
Delhayi—Rich reddish crimson, yellow centre.
Milleri—Purplish rose.
Roseum Nanum—White, tinted with bluish pink, orange yellow centre.
Parthenium, Flore Pleno—Fine double white.

[The flowers were received in good condition. The Pink answers to the description, and is beautiful. The Pyrethrums are large and showy, and being proved hardy, will be an acquisition to the flower border. Mr. Barker's notes on new and select plants constitute a valuable feature in our magazine, and will be continued.—Ed.]

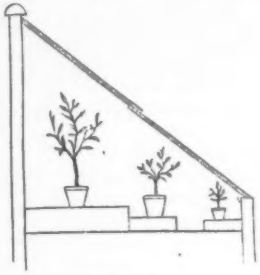
ORCHARD HOUSE OF J. S. LOVERING.

BY DR. GEO. PEPPER NORRIS, WILMINGTON, DEL.

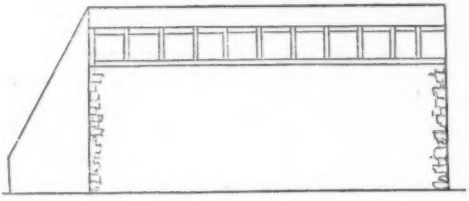


Mr. Lovering's Orchard House is 165 feet long by 14 wide, is a lean-to, points south, under shelter of a hill. Back wall 12 feet high, 8 feet stone work; on top of wall 4 feet of wood, in which the back row of ventilators (2 feet by 20 inches) works, hung on rollers, and all opened and closed simultaneously by means of a wire resembling a front door pull. Front wall 4 feet high, made by nailing plowed and grooved planks to locust posts, in which are cut the front ventilators, 4 feet 8 inches long by 18 inches deep, and covered by a screen of gauze wire with board shutters to close tight. The roof is made of 16 feet rafters, on which rests 8 foot sash, immovable; the glass is first quality, 18 by 10, (the Rivers-Saunders system of roofing would not only be cheaper, but present a better appearance, but was not in vogue when this house was built;) a single row of supports on one side of the wall completes the roof. The interior is divided into three borders: the front border (3 feet 6 inches wide) is raised 9 inches above the walk (which is 2 feet 6 inches wide); the first back border is 3 feet wide, and raised 16 inches above the walk; the second back border is raised 1 foot above the front one, and is 4 feet wide. On this further back border are placed the largest trees only, having the most head room—the smallest pots standing on the front. The appearance of the house, when seen by the writer on the 7th of April, 1860, was truly magnificent, being one dense mass of bloom, (except some of the early kinds, on which the fruit was already set,) resembling a greenhouse of Azaleas in full flower. Peaches, apricots, nectarines, plums, and figs are embraced in the assortment, and are grown principally in 11-inch pots placed about three feet apart, every leaf being fully exposed to the sunlight—vines being, of course, entirely prohibited.

Of the success of this mode of culture in America, no one who has witnessed Mr. Lovering's house can have the shadow of a doubt. With him it is no new experiment, having fruited pot trees in his cold graperies for several years. The rough cost of the house, Mr. Lovering informed us, was about $1000, but we



END VIEW.



BACK VIEW OF ORCHARD HOUSE.

FRONT VENTILATOR.

BACK VENTILATOR.

judge that a house of similar dimensions, with the Rivers roof and inferior glass, could be constructed for less than half that sum. The mode of culture, together with a description of the varieties found to succeed best, pruning, potting, etc., is reserved for a future article.

[The above is from a work in press by our well-known correspondent, Dr. Norris, and was sent us in response to a request for information on the subject of Orchard Houses, a knowledge of which is now so eagerly sought for. The work is entitled, "Fruit Trees in Pots, their Culture and Management adapted to the Climate of America," and Dr. Norris's practical mind will no doubt make it one of peculiar value.—Ed.]

FLORICULTURE.

BY C. N. B.

The cultivation of flowers is an employment adapted to every grade, the high, the low, the rich, and the poor; but especially to those who have retired from the busy scenes of active life. Man was never made to rust out in idleness. A degree of exercise is as necessary for the preservation of health, both of body and mind, as food. And what exercise is more fit for him who is in the decline of life, than that of superintending a well-ordered garden? What more enlivens the sinking mind? What more invigorates the feeble frame? What is more conducive to a long life?

Floriculture is one of the most innocent, the most healthy, and, to some, the most pleasant, employments in life. The rural scenes which it affords are instructive lessons, tending to moral and social virtue, teaching us to "look through nature up to nature's God."

The cultivation of flowers is an appropriate amusement for young ladies. It teaches neatness, cultivates a correct taste, and furnishes the mind with

many correct ideas. The delicate form and features, the mildness and sympathy of disposition, render them fit subjects to raise those transcendent beauties of nature, which declare the perfections of the "Creator's power." The splendid lustre and variegated hues (which bid defiance to the pencil) of the rose, the lily, the tulip, and a thousand others, harmonize with the fair fostering hand that tends them—with the heart susceptible to the noblest impressions—and with spotless innocence.

We know of no association more constantly present to the mind, or one more fitting, than that which connects woman with flowers; and rarely, indeed, does the first appear more charming, or engaged in an occupation more suited to her taste, than when she is surrounded by the latter, by blossoms that have been trained and cherished by her own fair hand. We have always admired flowers as the most beautiful productions of nature. True, they are fleeting, but what is there of the beautiful and lovely which is not? It may be sympathy, it may be mere imagination, but to us the thought has the force of truth, that we have never known a woman truly pure-hearted and angel-minded that did not love flowers. The things by which we are surrounded have their influence on our minds; they give the tone and coloring in a measure to our character, and perhaps our destiny.

A taste for the pleasures and comforts of horticulture in a country has been justly considered as an indication of refinement in the people, and its excellent moral effect has been acknowledged in every instance where it has taken place.

Who does not love flowers? They are such pure and beautiful things, such sweet gifts from our Heavenly Father, scattered with lavish hand to gladden the hearts of his creatures! Not for the wealthy alone do they bloom, but the lowliest cottager may claim them as his own, to beautify his humble home. We never passed a cottage overhung with vines, where roses and honeysuckles mingled, and morning-glories peeped in at the windows, without thinking that there must be, in that lovely abode, hearts full of love—love for the beautiful, and love for God.

Why is it that the home of the English cottager exhibits a degree of neatness and comfort so seldom seen in this country? It is because honeysuckles and jasmines are trained around the doors and windows; because flowers of many kinds and beautiful hues are mingled with shrubbery in the limited yard. Would that such a taste were more prevalent in this country! Where so much real pleasure can be purchased at so cheap a rate, so many senses be gratified at once, it is truly a pity so few are found to make the effort. Flowers around a door or clustered in a window, give an air of happy quiet and peace, of conscious security, and are a more correct indication of good taste, gentle feelings, and an unsullied heart, than silver plate or marble walls.

We claim it the duty of every man who is a farmer, to beautify and adorn his grounds and garden with flowers, plants, and shrubbery, and so arrange his yards and grounds as to give his habitation as Eden-like an appearance as possible. Should our farmers be thus true to themselves and dutiful to nature, then with truth of our country it might be said, in the language of the poet, 'tis

> "The land of the myrtle, the cypress, and vine,
> Where all but the spirit of man is divine."

Nothing is so attractive to the traveller as a fine country residence. It is

something for the eye to feast upon. It pleases the imagination, cheers the heart, and brings with it all the associations of happiness.

One blessing follows another. Sociality, refinement, and learning, follow in the train of rural improvement. The mind keeps pace with the outer man, and the love of the beautiful in nature inspires the mind with the love of the useful and the good.

IOWA PRAIRIE SKETCHES—No. 4.

BY "MINNIE."

JANUARY, the infant month of the new year, gave us rather a cold salute at his advent, when we hailed his approach at the first dawning morn of 1860; rough, angry winds wailed and howled around our dwelling, as if chanting the requiem of the departed hours of '59; and, with the mercury at 38 *deg. below zero*, all hands were kept busy piling the fuel into our stoves, and rubbing our aching fingers; but in a short time the wailing ceased, and the sun, which had risen fair and bright, seemed inclined to smile upon the new-born year. In forty-eight hours the mercury had risen to 10 *deg. above zero*, and Nature's pulse began to beat with a more healthy action.

This depression of temperature has, so far as I can learn, destroyed not only the peaches, but the *peach-trees*. Apples, I think, are not injured. Other fruit-trees are so scarce, that I have had no opportunity of observing the effect on them.

A fine young catalpa tree, a seedling of last year, planted for ornamental use, had, we supposed, of course gone; but at this time (May 12th) it is again in full leaf, and looks bright and healthy. A locust grove, sown on the 27th of May last, and which had attained an average height of something like 3½ or 4 feet, proves to be but very slightly injured. There was a very light fall of snow in January, which remained on the ground for some time.

February was a mild month for this region, the lowest fall of the mercury being 2 degrees above zero. The whole winter and early spring have been, it is said, with the exception of a few days in December and January, the mildest and dryest ever known in Iowa.

March, boisterous March, seemed to forget his blustering character this season, and showed only once or twice a frowning face during the whole thirty-one days. Indeed, we had *less wind* in March than in almost any other month for a year past, and the sun shined, most of the time, clear and warm. The mean temperature of the month was 55½ degrees Fahrenheit—the extremes 28 to 80.

On the 10th inst. grass began to show itself quite fresh and green on damp grounds, or wherever it had been burnt over late in autumn. Farmers were busily engaged in plowing, and sowing the cereal grains, and showed much hope and animation, notwithstanding their large cribs of corn remained unsold, and it was bringing in market only 12 to 15 cts. per. bushel, and at some places but a dime.

If we only had railroads to wheel it way into your Eastern markets, then, indeed, they might look up and work on with brave hearts. They still hope, however, "for the better time a-cumin;" yet hope, with fear that that better time is far in the future.

On the 30th, the leaf buds of the wild rose, walnut, cotton-wood, &c., were much swollen, and began to show signs of expansion. Cowslips (Caltha palustris) had leaves more than an inch in circumference; and all vegetation was at least a month more advanced than at the same date last year.

The first *flower* which I saw this year was one of the Caltha, mentioned above, and appeared on the *4th of April*. This was followed in succession by Viola delphinafolia and Pedicularis Canadensis, on the prairie; Anemone nemerosa, Claytonia Virginica, Sanguinaria Canadensis, Ribes rotundifolium, Ribes rigens, and Lysimachia Herbemonti or heterophylla, in the wood land; Astragalus obcordata, Phlox divaricata, and Hypoxis graminea, on the prairie; the last two of which are quite pretty, very abundant, and worthy of cultivation. Of the H. graminea (Nat. order Amaryllidaceæ), there are three colors, blue, white, and yellow. It mingles everywhere with the upspringing grass, and, together with the Viola delphinafolia, clothes the early prairie sod with a mass of tiny, delicate bloom, which, dotted here and there with the graceful Phlox, is quite charming to the beholder. In the forest, during this month, the elm, the willow, the cotton-wood, (Populus angulata,) the hickories, (Carya alba and C. sulcata,) etc., hung out their drooping tassels, and the soft maple (Acer rubrum) spread its crimson umbels.

But the "April showers," which, as the old saying goes, "bring forth May flowers," were wafted around us to the right and to the left, in their air-borne cars, and gave us scarce a drop to refresh the thirsty fields, or expand the drooping flower-cups. Strong, disagreeable winds blew almost constantly; the roads were *dry* and *dusty*, as in mid-summer, and the mean temperature of the atmosphere *lower* than in March; although we had a few very hot days in which the mercury stood at 83 degrees; but the month closed with a temperature below the *freezing* point, and ice half an inch thick in standing water.

The *sudden changes* and *extremes* of temperature, which often occur in a few hours, together with the almost constant *high winds*, which frequently swell to a gale, are the chief objections to living in Iowa. My table of temperature, from which I make extracts, reads thus: May 1st, sunrise, 30 degrees (viz., 2 deg. below the freezing point,) face of the sky fair, wind *north*.

May 2d, at 3 o'clock, 86 degrees; fair, wind *south*.

May 3d, at *sunrise* it was 60 degrees, and at 3 o'clock P. M., 89 degrees; fair, wind *south-east*. For the next two days it continued to range between 60 and 86 degrees. On the 5th, the *evening* observation at 8 o'clock 20 min. stands at 81 degrees; wind still *south-east*, but the face of the sky is *clouded;* the thunder rolls and mutters in the distance, and the hearty exclamation of every one is, "I hope we are going to get *rain* now!" We go to rest with bright visions of fresh green fields of grass and grain, and trees and flowers stretching upward, their bright leaves dancing with exhilaration, produced by quaffing largely from "the bottles of the sky." But we are soon aroused from our slumbers by a terrible storm of wind, which roars and surges like many mighty waters, and our house, trembling to its foundation, seems more like the hulk of a vessel at the mercy of an angry sea, than like a quiet landman's home. The clock is striking twelve. Hark! there is a terrific crash! Women shriek; children cry with fear; and men, springing from their beds, run about in the darkness. I too, starting up, exclaim, "What's happened? what *is* the matter?" But all is confusion,

one calling out, "Strike a light;" others, "Get some boards!" "Bring nails!" "Where's the hammer?" and directly one man is seen by the lightning's flash, trying to make a turn around the north-east corner of the house, with some broad boards in his arms; but the wind disputes his right, twists him this way and whirls him that, and it is with much skill in "*tacking*" that he at length makes his point, and where a window has been blown in, dashing glass and sash to pieces, he applies and makes fast his boards, shutting out the intruding blusterer, and restoring something like a semblance of order to the frightened household. The following morning dawns *fair* and *cool;* wind *north-west;* we have had *no rain.* But on the 8th inst. the long-wished-for blessing comes. For eight or nine months our wells, springs, and streams have been half dried up for want of rain; and this is the first time since February 22d, that enough has fallen to saturate the soil sufficiently to promote healthy vegetation.

[Not by any means a pleasant picture of prairie life, Minnie, and not even tolerable, except for the bounties so lavishly bestowed by Nature on the bosom of your beautiful prairies. Why will you not send us a collection of seed of your little pets?—Ed.]

AN HOUR IN THE VINEYARD.

BY J. S. REID, CONNERSVILLE, IND.

The operations of the vine-dresser for spring work are about over; the pruning, the staking, the tying, and hoeing are all done, and the young buds have burst from their winter cerements, and the bloom is waving in the balmy breeze; but how changed is my vineyard this season at *this* time, from what it was last year in May. Then *every* bud had opened its green bosom to the dew and the sunbeam, and the young branches were covered with the rich blossom of future joy; *now*, not more than one-half the buds have shown signs of life; the cases look dry and fruitless, so that under the most favorable circumstances not more than half a crop may be expected. What is the cause of this failure? Why is it the present should be worse than the past season? The vines are older, and the spring season has been more favorable than the last year's vernal months were; why do these young buds not start into life at the voice of spring?

Let us examine for a moment their outer covering; let us see whether the vital principal is extinct or not, under its tender sheath. We open the covering, but the life is gone; the gummy sheath which nature gave to it before winter set in, is broken, and instead of the glossy mail which shielded the young germ, a sponge-like substance is found, an evidence of death. Such was the prospect that greeted our steps into the vineyard in the opening of the merry month of May, and *now* the scene is but slightly changed.

I purchased of Ellwanger and Barry, during last fall, several varieties of new and much-lauded grape-vines, among which were the Delaware, Anna, Rebecca, Union Village, Clara, etc., all of which were planted with much care and attention, in the hope of passing securely the winter; but judge my surprise when I found them all dead to the earth line, and not much hope of a resurrection; but patience and perseverance triumphed.

How was this done? I went and obtained old glass fruit-cans, from which I took out the bottoms, and with these I made nursing glasses, placing one over every vine. How anxiously did I watch from day to day the first appearance of life in the semi-frozen bud, and how carefully did I aid the expansion of the young leaf from its earthy tomb, until one by one each vine gave evidence of full life, and the glass was full of the young leaves of the vine!

For a *few* days our last winter was unusually severe; the thermometer stood 10 degrees below zero, destroying all the peach buds, with many of the young trees.

Along the valley of the White Water not a peach blossom was seen this spring, and I am informed that the vineyards in the adjoining counties are as badly injured as my own, so that not more than one-half a crop of grapes or wine will be realized. Last season I made some two hundred gallons to the acre; now one hundred gallons must be the maximum of the vintage.

I regret that I do not live within a few miles of your sanctum, where a bottle of my "Pure Catawba" would moisten your dry "whistle," and attune your voice to the melody of spring; but living so far in the West that the expense of forwarding a few bottles to you would cost more than the value of the wine, I have given only the will for the deed. I have several seedling grape-vines, some of which will fruit this season; but until the second year's fruiting, neither the quality nor the productiveness of the vine can afford a safe criterion of its *true* value.

I have the Black Hamburgh blossoming in the open air. The leaves are pure and clean, and the berries well set; the bunches indicate large clusters heavily shouldered. These I covered during the winter along with the White Sweet-water, Black Prince, and El Paso, all of which are doing well. My Concord, Diana, and Isabella were all more or less winter-killed in the bud; but, on the other hand, my Lawton Blackberry, Red Antwerp, Cope, Wilder, and Orange Raspberries all survived.

The Apples and Pears in this neighborhood are chiefly safe, but the Cherry, Peach, and Apricot are all gone; and the Plum will soon be, as that felonious rascal, the Curculio, is among our orchards, and robs with impunity our best Gages before maturity.

But by comparing watches I find that my hour is about up in the vineyard, and I understand it to be standing rules with editors and all good writers, to keep within time, avoid prolixity, dulness, and stupidity, and when you have written enough, to stop; hence I close this rambling epistle by subscribing myself your friend.

P. S.—Having several seedling grape-vines now bearing, and many more that must bear superior fruit, I want to employ some noted PUFFER to bring them into notice; that is, after the Ontario, Maxatawny, and Brandywine have all run their race, and gone to the tomb of the Capulets; but do not think that I will engage *your* services. I will employ some Peter Funk to do this; a man whose virtue is free and easy, and whose conscience is full of the love of nature and the milk of human kindness.

[J. S. R. has passed his hour pleasantly and profitably. When he can spare the time, we shall be glad to pass another hour in the vineyard with him. We condole with him on the partial loss of his Grapes, Peaches, and Plums; he has been spared, however, to a greater extent than many others,

who will eat their "Peaches and milk" this year solely through the medium of the imagination; and those who can relish them in that way will have a good time of it. You are right, R., about your seedling grapes; do not send them to us for the purpose you suggest, unless you are quite sure of them, for we are apt to be very candid about such matters. Much obliged to you for the Wine. Hold on it till called for, which may be sooner than you expect.—Ed.]

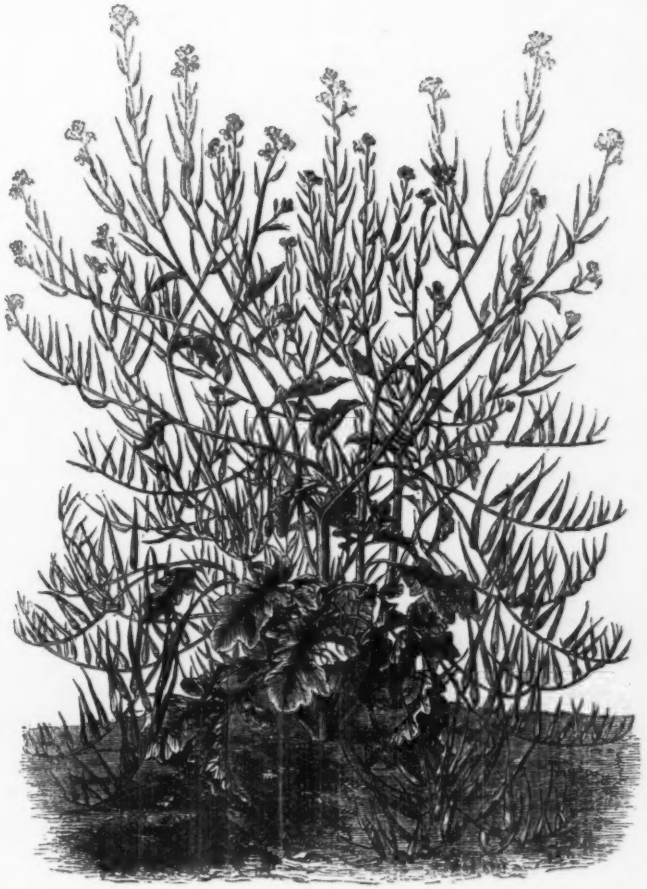
THE MADRAS RADISH.

(From the *Revue Horticole.*)

The Madras, or Edible Pod Radish, was obtained in 1858 at the Edinburgh Botanical Garden by M. Courtois-Gerard, and was introduced into France by that skilful horticulturist. It is an annual plant, of tall, bushy, and vigorous habit. The root is turbinate, conical, white inside and out, having a total length of 30 centimetres or more, and a diameter of 10 to 12 centimetres at the largest part, which is near the neck. [A centimetre is about four-tenths of an inch; a metre about thirty-nine inches.] The tendency is, to strike a strong, deep tap-root. The stem is about one metre high, and about two to three centimetres in diameter. It is straight, of a clear green color, spotted with red, smooth, and furnished from the bottom upwards with numerous branches, upright and undivided at the base, spreading and subdivided at the top. The leaves, 40 to 45 centimetres long, and 15 to 20 centimetres broad, are nearly sessile, lyrate, with deep, wide divisions, smooth on the upper surface, slightly pubescent on the under side, mostly near the edges. The form of the leaves changes with their height on the stem, the upper leaves being petiolate, entire, lanceolate, and dentate.

The inflorescence, as in all the cruciferæ, is corymbose, but becomes racemose by the elongation of the axis. The flowers are regular. The calyx of four converging sepals becomes of a rosy tint in the expanded flower. The corolla is formed of four petals placed cross form, spread, of a clear violet color, showing a network of veins of dark violet, or white mixed with pale violet; the four long stamens extend beyond the throat of the flower; the two short ones reach only to the opening, as does also the pistil, which is terminated by an obtuse stigma. The seed pods attain the length of 30 centimetres, with a diameter of 1½ centimetres at the base. Their ordinary size is as represented in the figure. They are erect, and form an angle with the pedicle; are of the shape of a cone very much elongated, showing, in the lower half, swellings corresponding to the compartments containing the seeds. There is a slight contraction at the base, and the summit is a long conical point or beak. The shells of the pods are thick and fleshy; the seeds, single in each compartment, are oval, of a bright reddish brown, slightly rough, about four-tenths centimetre long, and three-tenths centimetre thick.

This plant was labelled at the Edinburgh Botanical Garden, *Raphanus caudatus* of Linnæus. M. McNab, the director of the Garden, received the seeds from India with the designation of *Madras Radish.* It differs considerably from the drawing and description of the *Raphanus caudatus* as given by Linnæus. The Swedish botanist states that the seed pods, called *Mougri* by the Indians, attain the length 1.65 metre; but, according to Schkur, they are not often more than 33 centimetres, which corresponds



THE MADRAS RADISH

with the dimensions noted by M. Courtois-Gerard. In the notice on this subject presented to the *Société Centrale d'Horticulture*, M. Duchartre regards this radish as merely a variety of the common radish (*Raphanus sativus* of Linnæus). The reasons given by our learned associate do not, however, appear to us perfectly convincing. Be that as it may, we do not perceive any objection to its retaining the name of *Madras Radish*, by which it was introduced by M. Courtois-Gerard.

There is a variety of this plant with white flowers, pods of a paler green and more fibrous texture, and larger roots.

The culture is easy. It adapts itself to the most meagre soils, but prefers a good free loam. To be able to gather it for a long time, it is sown at different times from March to the commencement of August, but the end of June and beginning of July are the best periods. It is sown where it is to remain, at distances of about two metres each way, placing two seeds in each place. It is watered a few times, especially the earlier sowings. The seeds, which retain for a long time their power of germinating, push in three or four days. The surplus plants can be removed, with a ball of earth, to fill vacancies.

By sowing on a bed of salads or spinach, there is the double advantage of economizing land and hastening the crop, as the plant comes forward more rapidly than when grown on a naked soil.

In some localities, as, for example, in the calcareous plains of Montrouge, the Madras Radish has been attacked by the flea, which, as is well known, has a marked predilection for the cruciferæ. At Thernes, M. Courtois-Gerard has noticed but few of this insect, but an abundance of the green fly, (aphis,) from which he freed his plants by frequent waterings.

The root of this radish is edible, and has nearly the taste of our common radish. When it is too old, it becomes fibrous and hollow—a mere fleshy shell.

The most remarkable characteristic of this plant is the spicy taste of the seed pods, analogous, in this respect, to the common radish. In order to make this peculiarity available, it is necessary to gather them before their maturity; at a later stage of growth they become insipid and leathery. Those of the white-flowered variety are inferior in quality.

In general it may be remarked that the size, color, and quality of the seed pods are in inverse ratio to the development of the root; there is, therefore, no advantage in substituting the Madras Radish for the ordinary kinds, if the root only is wanted. This is not the case, however, if the plant is cultivated for its fruit, which, according to our experience, is perfectly competent to figure as a side dish on our tables.

The plant is very prolific, as may be seen by the figure, and this, too, in a small space, making it desirable for small gardens. We should add, that, without being exactly ornamental, the flowers are not without agreeableness, particularly the white and lilac varieties. It is quite possible that the fruit will make a desirable pickle, to which use the *Raphanus caudatus* is applied at Madras, as we learn from Linnæus.

[The seed of the Madras Radish was introduced here this spring, and we have it growing. Its value, whatever it may be, will therefore soon be known.—Ed.]

NEW OR RARE PLANTS.

PTERIS TRICOLOR (Linden).—From M. Linden, Brussels. This beautiful new variegated fern was awarded a first-class certificate of merit. It is a dwarfish plant, with the habit and appearance of Pteris aspericaulis, of which it is a variegated variety. The fronds are about a couple of feet in length, pedately pinnate-pinnatifid, *i. e.*, pinnate, with the lowest pinnæ bipartite, the pinnæ and branches being pinnatifidly divided; the stipites are roughish dull purplish, the rachides and costæ purplish red, the latter bearing purplish-red spines on their upper side at the base of the segments. The fronds are of a deep green, the purplish-red rachides bordered on each side with a broad band of greyish-white; the young fronds are deep red. The colors are very striking and effective, and render this a most important addition to the fern family, among which variegated forms are rare. It was stated by M. Linden to have been introduced from Malacca.

ADIANTUM PATENS.—From Messrs. Veitch and Son, Exeter and Chelsea. This is an extremely elegant stove fern, producing a tuft of erect fronds, which in this instance were a foot or more in height, though the plant was not fully developed. The fronds are bright green, pedately branched, the branches being pinnate; the pinnules oblong, very obtusely rounded, somewhat curved backwards, crenately-lobed, and bearing a few reniform-orbicular sori. The plant was awarded a first-class certificate of merit, as being a desirable species of a highly ornamental character. It had been obtained from the continental gardens, as a species of Lindsæa.

LÆLIA PRÆSTANS.—From R. Warner, Esq., Broomfield. A weak plant, bearing one small flower, of a very ornamental character. The stems were short clavate; the leaves oblong acute or bluntish. The flowers were of a pale purplish rose, three and a half inches in expansion; the sepals lanceolate, the petals ovate, twice as broad as the sepals, the lip rolled up into a curved tubular form, about an inch and a half long, and having inside, near the mouth, four very slightly raised or crested veins, the two exterior of which were the most prominent; the tube-formed portion of the lip was orange-yellow inside, and tinged with purple exteriorly, the mouth being of a deep rose-purple indistinctly margined with white. It was very closely allied to L. pumila.

LÆLIA PUMILA, var. MAJOR.—From R. Warner, Esq. This was also a small weak plant, and proved to be identical with the Cattleya pumila, var. major, of Lemaire ("L'Illust. Hort.," vi., t. 193), who proposes to reduce Lælia to a section of Cattleya. It was similar in habit to the foregoing, with rather longer and more decidedly oblong leaves. The flowers also were larger, measuring over four inches across, with the lip two inches long: the sepals and petals of the same form and color as in that called præstans, but the lip differently colored, the tubular portion being white inside, and whitish below, purplish above on the outside, while the mouth was rich rose-purple, paler towards the edge; two obscure crested veins only were visible inside the lip. Mr. Warner stated that the latter plant, which he called Lælia spectabilis, "always has larger flowers than præstans, even when the bulbs of præstans are the stronger of the two." The plants had been imported from Brazil as Cattleya marginata, and were both regarded by the Committee as forms of the variable Lælia pumila, better known under the name of

Cattleya pumila, of which the Cattleya marginata of gardens is again another form.

ONCIDIUM CHEIROPHORUM (Reich.).—From R. Warner, Esq. This was a cut spike of an exceedingly curious small-flowered yellow species, much less showy than many other kinds, but of remarkable structure, and forming a pretty, free-blooming, small-growing plant. It had been in bloom for six weeks: the sepals and petals were roundish, concave, and reflexed; the lip three-lobed, with two ear-shaped projections at the base, the middle lobe roundish, and the lateral ones somewhat oblong spreading; the column had a pair of large curved lateral wings near the top, a strong recurved tooth or horn standing up in front of it, and the crest of the lip was arched, with a pair of teeth at its base. The flowers were clear pale yellow, and slightly scented.—*From the London Horticultural Society's Proceedings.*

DRYAS DRUMMONDII, *Rich.* Nat. ord. *Rosaceæ.* Native of the Rocky Mountains, North America.—A hardy perennial, of procumbent habit. Stems and branches woody. Leaves oval or obovate, crenate, dark green on the upper surface, covered below with pure white down. Petioles short, stipulate, downy, tinged with red. Stipules subulate. Scape terminal, one-flowered, downy, with a single awl-shaped bract near the middle. Calyx deeply divided into seven or nine acutely ovate, membranaceous segments, clothed on the back with purple, viscid hairs. Petals equal in number, and alternating with the calyx divisions; broadly elliptical, with a short claw, bright yellow. Stamens numerous, with long hairy filaments. Styles also hairy, persistent, and becoming elongated in fruit.

A very beautiful alpine plant, but also rare; being, indeed, seldom seen beyond botanical establishments. It is well suited for shady parts of a rockery; and flowers more profusely, and longer in duration, in such a situation, than in pots, or in a more exposed position. The compost it prefers is light, sandy loam about one part, with two parts of peat or leaf mould. In pots it must be thoroughly drained, and protected from the autumn rains. The long feathery styles, adhering to the ripe seeds, give an interesting and a graceful appearance to the heads of fruit.

PRIMULA STUARTII, *Wall.* Nat. ord. *Primulaceæ.* Native of the Himalaya.—An alpine, herbaceous plant. Leaves radical, numerous, long, broadly lanceolate, acute, gradually gliding at the base into a short footstalk, which is much grooved on the upper side; margin acutely serrated, pale green, and shining above; covered below with yellow farina. Scape about fifteen inches high, terminating in an umbellate inflorescence. Involucre composed of numerous lanceolate leaflets. Calyx monosepalous, tubulate, and slightly campanulate; limb divided into five acutely lanceolate segments, farinose. Corolla monopetalous; tube long, contracted near the mouth; limb salver-shaped, divided into five rounded segments—yellow, tinged with orange towards the centre. Stamens five, attached to the tube of the corolla. Style long, surmounted by a capitate stigma.

This is one of the most striking species of the genus Primula, and by no means a common one; indeed, it is a pity it should be so scarce. Peat and loam in nearly equal parts, with a good portion of sharp, gritty sand, form the most suitable compost for it.

VRIESIA PSITTACINA, *var.* RUBRO-BRACTEATA, (*Red-bracted variety of Parrot-flowered Vriesia*).—"Native of Brazil, and a very great ornament to our

stoves, by bearing its handsome scarlet and yellow spikes of flowers in the winter."—(*Botanical Magazine, t.* 5,108.)

NEPENTHES AMPULLARIA, (*Ampullaceous Nepenthes, or Pitcher Plant*).—Native of the Singapore forests, and other places in the vicinity. Flowers in August. Pitchers small and unattractive.—(*Ibid., t.* 5,109.)

FUCHSIA SIMPLICICAULUS, (*Slightly-branched Fuchsia*).—Sent from Peru to Messrs. Veitch, by their collector, Mr. W. Lobb. Bloomed in October, 1858. Flowers "rose scarlet," large, and beautiful.—(*Ibid., t.* 5,096.)

HIBISCUS RADIATUS, *var.* FLORE PURPUREO, (*Purple-flowered rayed Hibiscus*).—Common in the Calcutta Gardens, but raised from seeds received from Mr. Wilson, superintendent "of the *late* Botanic Garden at Bath, in the Island of Jamaica. I say *late*, an awful avalanche of stones having recently overwhelmed the Garden."—(*Ibid., t.* 5,098.)

PHYLLOCACTUS ANGULIGER, (*Angle-stemmed Phyllocactus*).—Native of western Mexico. Blooms in the winter. Flowers large, white, and very fragrant.—(*Ibid., t.* 5,100.)

THUNBERGIA COCCINEA, (*Red-flowered Thunbergia*).—This beautiful and gigantic climber has been called, also, *T. pendula* and *Hexacentris coccinea.* It is a native of the jungles in all the hilly regions of tropical India. It has at length bloomed in the ample space of the Palm-house at Kew.—(*Ibid., t.* 5,124.)

CYMBIDIUM EBURNEUM, (*Ivory-like Cymbidium*).—"This lovely and rare Orchid" is found at an elevation of five to six thousand feet in the Khasia mountains of East Bengal. Flowers ivory-white, blooming in April.—(*Ibid., t.* 5,126.)

CEANOTHUS VEITCHIANUS, (*Mr. Veitch's Ceanothus*).—This "magnificent acquisition to our hardy shrubs" was sent from California by Mr. W. Lobb to Messrs. Veitch. It surpasses even the other species—*floribundus, Lobbianus*, and *papillosus*—"in the abundance of its bright mazarine-blue flowers."—(*Ibid., t.* 5,127.)

DATURA CHLORANTHA FLORE-PLENO, (*Double yellow-flowered Thorn-apple*).—Sent from South Australia, where it produced "its sweet-scented flowers for seven or eight months;" "planted in the open borders in June, it may be expected to bloom here during August, September, and October." Probably a native of Europe, but raised in Australia from imported seed.—(*Ibid., t.* 5,128.)

A FEW NOTES ON GRAPES, PEARS, ETC.

BY H. A. BIZZELL, CLINTON, N. C.

I AM quite ready to confess that I am no pomologist; neither do I wish to write for the "sake of Buncombe," as it is called here in our State. Nor should I have pretended to write at all, but for the appearance of an article in the June No. of the HORTICULTURIST, over the signature of Hugh McLean.

If I can not write anything that can be made useful to some portion of the human family, I prefer not to write at all, as spurious literature, or the circulation of such, I have as much contempt for as I have for the circulation of spurious coin. In the language of my friend, G. W. Johnson, (of Milton, N. C.,) though it may be less immoral, it is equally mischievous.

The only object of the writer seems to have been to dispute the utility of

the mode of pruning Grapes as promulgated by me in the HORTICULTURIST for March, 1860. He admits that a second crop was produced, and one that did not mildew, although he says the first crop did mildew. This admission will do away with the objection of the editor of the HORTICULTURIST in the March No., as appended to my article, that more than one crop would not reach maturation. But says he, "the grapes were sour." I do not pretend to say that the second crop will be equal to the first; though I do say, if properly managed, they will be good grapes—no more acid, perhaps, but less sugar, which makes them not equal to the first crop.

It is well known to you that grapes grow upon the young shoots of the present year; and you also know that when the Isabella grape and many others are highly manured and pruning neglected, that mildew is almost certain after the vine has passed the third year of its age. The usual custom of training grapes horizontally, or permitting them to run on trees, as generally practiced in this country, precludes all idea of proper pruning. In such cases here the first crop mildews, and a second crop is not unfrequently produced very late in the season; such grapes are generally insipid, if ripened very late. From what Mr. McLean says of his, (ripened in November, of course,) they must have been identical with such grapes as I have above described, and about equal to a third crop produced in the manner I have described in a former number of your work.

Could a man that knows no more of botany, vegetable physiology, and the kindred sciences, than to graft a peach upon a persimmon with the expectation of succeeding, know much about grapes or any other fruit? Amygdalus and Persicus are words unknown to such men, and you, Mr. Editor, could not help smiling at the very idea, I know from your remarks below his article. Could such things occur in the history of the world, that one family of plants and trees would succeed equally well upon any other, our forests might all be converted into one grand orchard.

I saw with pleasure that Mr. John Egan had applied this method of pruning to grapes under glass for years with perfect success. May No. HORTICULTURIST, page 247.

I regret to see that the peach crop is likely to fail in most parts of our country; we have here a fair crop. Apples are not so abundant. Pears are doing well. I notice among my own what I have not seen in two or three years—blight on both apple and pear-trees in this vicinity. My dwarf pears have seldom blighted much, except some particular varieties. I have had the misfortune to lose every Beurré d'Aremberg I have ever raised, about the fourth or fifth year of their growth, by blight. My Seckels do well and bear finely this year; Bartlett the same. The Washington pear deserves more attention than it has received, as Mr. Landreth has well remarked in his Gardener's Dictionary. It never has blighted with me, is a beautiful grower, succeeds well on quince, bears abundant crops, and the fruit is equal to the best, and has even more of the musky flavor than the Bartlett. The Marie Louise, White Doyenné, Belle Lucrative, Duchesse de Berri, and Beurré Diel are all bearing well for me this year. The Bloodgood, Dearborn's Seedling, and Duchess d'Angoulême are not so full; in fact, the latter never has sustained its high reputation in this latitude; we work it only on quince.

Although this article has now reached a greater length than I at first intended, still I wish to communicate one other thing that may be, as you say

of the grapes, "more curious than useful." I saw an article which was written by some very able gentleman a few years ago, in which the declaration was made that the Chinese had far outstripped the balance of the world in many of the useful arts, and among other things that were mentioned was their success in dwarfing the apple and pear, as well as other fruits. It was asserted by the writer that he had seen perfect trees, with fruit on them, not more than two feet high. Now I can show a perfect apple-tree, bearing a full crop, (growing side by side with dwarf pears, which are at six years old from ten to twelve feet high,) that is not more than two feet high on land as rich as I can make it. This is accomplished by grafting the apple into the small shrub which we call here "choke-berry." It is a miniature apple, the botanical name of which I do not know, but a specimen of which I send you for information. If you can not tell from this, I will send you the blooms next spring. It is, however, of the apple family, and I have no doubt but that the pear will succeed upon it. It does much better when the ground is moist, or too wet for apples, than when it is dry. One of the most beautiful things I have ever seen is a yellow Siberian Crab Apple worked into one of these, not more than 2½ feet high, just as full of fruit as it can be.

[Mr. Bizzell may continue to write such articles as the above, with the full consciousness that he *is* writing "something useful to the human family," and we hope the spirit will move him to do so often. We admitted, in our April number, that we had failed to understand Mr. B.'s method fully, but were of opinion that only the first bunches would ripen at the North, and that the advantages of the new system of pruning would, therefore, be confined to the South; we suggested, however, that it might have its advantages for grapes grown under glass, and this view was confirmed decidedly by Mr. Egan in our May number. Mr. B. seems to have overlooked the correction we made. Next came Mr. McLean's testimony, which impelled us to call for more light in regard to its application to the vineyard. Mr. B. responds, and we have additional light. We shall apply the new system to a number of vines, and others here will do the same, so that we shall know how far it can be made available at the North. Its advantages, however, will be more manifest in the genial clime of the South. Mr. B.'s account of his dwarf apple is exceedingly interesting, and very opportune. The little slip sent we take to be *Pyrus* or *Aronia arbutifolia*. We suggest it, and Mr. B.'s remarks, to the consideration of all lovers of fruit-trees in pots.—Ed.]

THE CONTRAST—THIRTY YEARS AGO AND NOW.

BY WILLIAM BACON, RICHMOND, MASS.

The year 1860 opens a new decade in the history of human progress and improvement; and, if we may judge from the results of its early dawnings, we come to the agreeable conclusion, that more advancement will be made in improving the rural aspect of the country in the ten years next before us, than has been the result of the past sixty of the nineteenth century. This may seem a bold calculation to some indifferent, faithless ones, but the careful observer, we are sure, will join with us in the prediction, and heartily coöperate to accomplish its fulfilment.

"Thirty years ago," and how few thought of planting out shade or fruit-trees! At that day there was a mania for "*cutting down*" orchards instead of improving them, and the folly of it has been fully realized in the scarcity of fruit that followed, in some districts at least. How far the trees that were sacrificed could have been improved and made more valuable is of little consequence now. Their legitimate owners looked upon them as so many cumberers of the ground, and, without giving a thought to the practicability of digging about and dunging their roots, scraping and cleaning their bodies, and grafting their tops with varieties of whose fruit the market can not be supplied for a long time to come, "behold, the axe *was* laid at their root," the air made desolate of fragrant blossoms, and successive autumns bereft of great lapfuls of beautiful and delicious fruits, bringing comfort and health to the consumers. Then, however, good fruits were not appreciated as they now are. In one particular instance we recollect hearing a farmer exult, that his Greenings, Spitzenburgs, and Seek-no-furthers, the popular apples of the day, had brought him twelve and a half cents a bushel, taken a mile to market. In several instances since, the same varieties of fruit, from the same trees, have brought from fifty cents to a dollar a bushel in the orchard.

"*Thirty years ago*," a few "foolish fellows" had begun to plant shade trees by their dwellings and along the wayside. In the more refined villages, their streets were being lined with those beautiful appendages of health and comfort; but in the rural districts the person who ventured on the experiment was, by almost common consent, called a fool. "Why waste time and strength for setting out trees? They won't half of them live. If they do, they won't amount to anything in your day. Let posterity plant its own trees; I've enough to do without that." How often have men and women, who used the above or similar language, and spent as much time in ridiculing the planter as he did in setting his trees, looked upon the beautiful, stately, and luxuriant growths of his creation with admiration, and wished, though it may for very shame have been a suppressed wish, that they had planted trees too. If they had done so, how many rough and wrinkled spots on the face of nature would now have been dimpled with beauty! What long and stately rows of trees would have marked the meandering courses of our thoroughfares; and how many a dwelling, now desolate of trees, exposed to the full glare of the sun, the merciless peltings of the storm, and the rough blasts of angry winds, would have had a mitigating shield of beauty and verdure thrown around them! Then look at it through the great American magnifier, the "*almighty dollar;*" how many more sticks of timber, worth so much a foot, and how many more cords of wood, all handy to get, and worth just so much a cord, standing, would every farmer, every land-holder, have had now, in a marketable condition, growing upon his premises!

From every consideration that can be brought to bear on this subject, it is a matter of cheering encouragement that there has been so general a *waking up* in this matter. Though now and then a solitary Rip Van Winkle, or in some instances a whole community of them, may be found still asleep, with the rusty musket of the old ways by their side, such cases are rare. From the observations made in our limited travels this season, and the information that comes to us from abroad, we have come to the conclusion, (and we trust it is a safe one,) that more ornamental trees have been

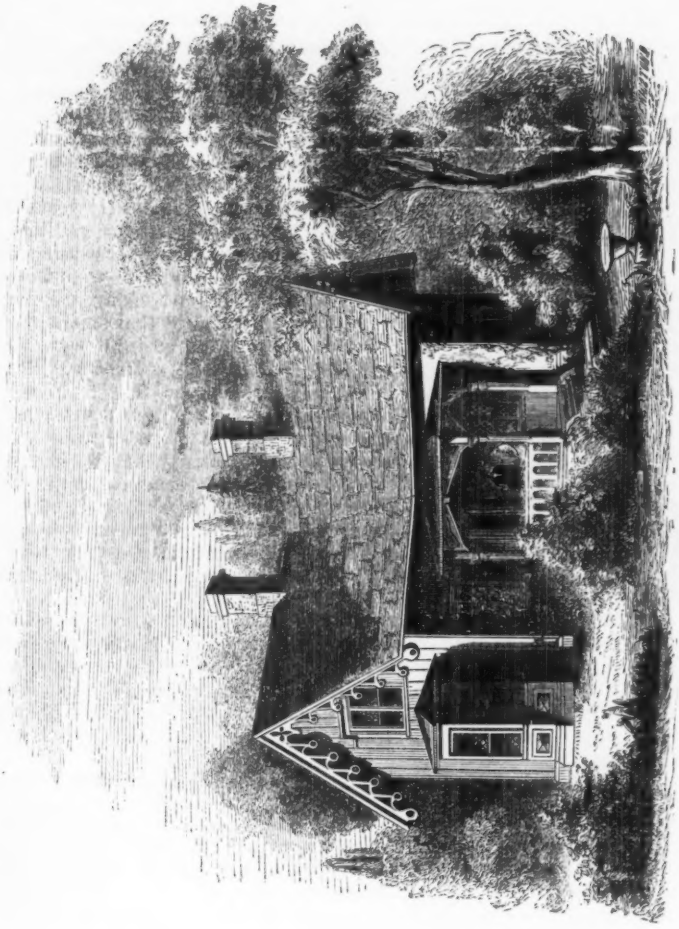
planted in the spring of 1860, than in any two years that ever preceded it. Small villages boast of the accession of two or three hundred trees, and in larger ones, not before provided, an increased number is shown.

Individual labor has ceased to have the monopoly of these improvements. Associations, under the names of "Farmer's Clubs," "Ornamental Tree Associations," &c., are becoming "fixed institutions" all over the land; and it is to their united and concentrated effort the country is beginning to smile under the new order of things. May the number of these associations increase until it embraces the whole population of our country.

"*Thirty years ago*" the taste of tree-planters in general looked at only one variety, the maple, to satisfy their aspirations. A few had learned to appreciate the pride of our forests, the elm, and fewer still sought beauty in variety. But in canvassing the trees that were set out thirty years ago, we find the maples so far in the majority as hardly to give a position to other trees. Then, but few evergreens were planted out. "It was so difficult to make them live. They looked so gloomy, and the wind howled through them so, they were really melancholy." With many, the maple still maintains supreme ascendancy, and no one can deny that it is a beautiful tree, developing itself with much symmetry and gracefulness. And what tree of our American forests, planted in a favorable locality, will not develop the charming, eye-feasting, pleasure-inspiring qualities? We have planted many trees, have visited forests to see their denizens flourish in the soils where nature planted them, and where age had given them full maturity; and we have never yet met with a sylvan deformity, unless where inflicted by torture of man, and have never seen a species or variety that did not possess enough of the forms of beauty and charms of elegance, and of peculiarities strikingly its own, to warrant it a place in any niche where observation may lead her votaries, or refined and cultivated taste may seek a recess or a banquet in retirement, to feast upon the charms of the natural creation.

Where such untiring variety exists as we find in our forest trees, why do we confine ourselves to the few we have done in planting out our grounds or adorning the wayside? The maple is fine, and will give agreeable contrast to the larch or the ash, if planted by its side; the poplar, that comes into leaf early, should have a place by the chestnut or the oak, and so on, making changes and giving contrasts until every variety of tree has its proper position.

We have alluded to evergreens, and the funereal character that was once attached to them by some—not all, however, by a pretty large number. It has been found that those sighs of the wintry wind that warble in their branches are only its death dirge, making melody to the power that breaks its violence, and tempers it to meet the circumstances of all living things it might otherwise molest. In the desolations of winter, they stand beautiful memorials of the departed glory of summer days gone by, and give us assurance that spring shall again drape the earth with its mantle of verdure. No grounds can be protected from the inclemencies of climate without their protecting agency. No border of trees along the wayside can claim beauty or attraction, unless they are freely scattered through its ranks. In summer they will give beauty to variety, and in winter they will greet us with the ardor of friendships that survive the storm, and live unchilled by the frosts of time.



DESIGN FOR A SUBURBAN COTTAGE.

DESIGNS IN RURAL ARCHITECTURE, No. 3.—DESIGN FOR A SUBURBAN COTTAGE.

BY GEO. E. HARNEY, LYNN, MASS.

We offer the readers of the Horticulturist this month another design for a rural dwelling.

It is smaller and less expensive than those we have before presented, and on this account we are confident that it will meet the wants of a larger class of people.

It is designed to be built of wood, and covered with plank put on in the vertical manner, and battened. The roof is to be covered with cedar shingles; part of them pointed at the lower end, and laid on in the lozenge or diamond pattern, and the rest put on in the usual manner.

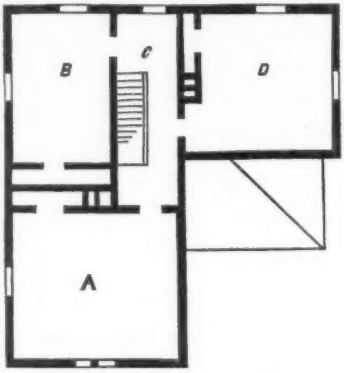
The exterior is somewhat ornamental in its character, and great care should be taken in building, that the trimmings have a solid, substantial

appearance, the verge boards more particularly. For a cottage of this size, the plank from which they are cut should never be less than two inches in thickness, but oftentimes thicker than that. The bay window and verge boards form the prominent features of the front, while the entrance door is shielded by a veranda eight feet wide, supported on heavy posts and guarded by a balustrade. The upper panel of the front door is glazed, to admit light into the hall. This hall is 6½ feet wide and 13 feet long—contains a flight of stairs to the second story, the only chamber flight in the house—and opens into the several rooms.

The parlor is 14 feet by 15 feet 8 inches, and is lighted by the bay window in front, and two single windows on the sides. It also contains a closet on the side of the chimney breast.

The bed-room is 9 feet by 14, and is furnished with a large clothes-press; a flue runs from the room through this closet into the chimney.

The kitchen measures 13 feet by 14 feet 6 inches, and opens into the pantry, which has on the left side a pump and sink, with a closet underneath, and is fitted up with shelves for stores; it opens out upon a platform, from which steps descend to the yard. Under this platform is an entrance to the basement, which may contain a cellar kitchen with oven and boiler, closets, store-rooms, and fuel-rooms.



On the second floor are three good-sized chambers, well lighted, and supplied with closets.

The height of the first story is 10 feet 6 inches, and that of the second is 4 feet at the eaves and 10 feet in the centre of the rooms.

This cottage could be built for about $1500.

[The reader will not have failed to observe, in all Mr. Harney's designs, a most economical and convenient arrangement of the interior; and this, in our opinion, constitutes the chief excellence of a dwelling; for however desirable may be a certain degree of exterior ornamentation and picturesqueness, the comfort and economy of the household depend so much upon the interior arrangement, as to be entitled to the first consideration in the estimation of all. Mr. Harney will presently furnish designs for outbuildings, rustic work, &c., in which we have no doubt he will be equally happy. —Ed.]

THE SINGLE STEM, DWARF, AND RENEWAL SYSTEM OF GRAPE-CULTURE.

BY WILLIAM BRIGHT, PHILADELPHIA.

In the June number of the Horticulturist I observe that the credit of first announcing the Single Stem Renewal System of Grape Culture, which forms the basis of my recent work on that subject, is given to my neighbor, Mr.

W. Saunders, of Germantown. Mr. S. I esteem as one of my personal friends, and as a clever, pains-taking member of the horticultural profession, and I was rather surprised to discover an attempt on his part to set up a claim of this kind. I fully believe that the method of growing grapes proposed in my work is new, and that it originated with myself. It has been received by the horticultural profession throughout the United States as new. It is not only not in practice, either in the grapery or the vineyard, that I am aware of, (except in some half dozen houses and vineyards planted by myself,) but it is doubted by many whether it is a system that will answer in practice at all. Now I believe that this is the best system of grape-culture ever invented, either for native grapes in the vineyard, or for foreign kinds in the cold grapery or forcing-house. I think it will become the universal system, until a better one shall be devised; and I shall certainly be proud to be the author of a new and perfect system of American grape-culture.

In the month of June, 1858, the plan of growing grapes on a single stem, cut down every other year, and fruited during the intermediate years on dwarf canes, was fully matured in my mind, and was spoken of freely by me in conversation. In the spring of 1858 I planted some Diana vines for one of our leading city editors, on this system, and fruited them last year on dwarf canes, with the best results.

In the fall of 1858 I prepared my work on Grape-Culture; in January, 1859, placed it in the hands of the printer; announced it in the *Gardener's Monthly*, July, 1859, and published an extract from the manuscript.

In May, 1859, I planted, for a gentleman within the city limits, on the east side of Germantown, a vineyard of three thousand natives vines, on this system, viz., two feet apart, so as to permit each alternate cane to be cut down annually, and with wire trellises less than six feet high. In July, 1859, I erected a vinery for the same person, one hundred feet long, and prepared a border for fifty vines on this new system. In May, 1859, I also superintended the construction of a vinery in West Green Street, Philadelphia, on this plan, which will be fruited this year; and the subject was constantly talked of by professional gardeners, personal acquaintances of Mr. Saunders, in and about Germantown and Philadelphia. (Germantown, it is probably known, is a district within the corporate limits of Philadelphia.)

Nearly ten months after my work was written, (viz., in September, 1859,) and more than six months after my single-stem vineyards and grape-houses were planted in and about Germantown, Mr. Saunders suggests, in an article in the HORTICULTURIST, that vines might be cut down every other year with advantage, and hence it is assumed that the idea did not originate with myself. I will not say that Mr. S. took an unfair advantage of me, in publishing this idea when he knew that I was about to publish it. I cared nothing about this. It was generally known in Philadelphia to be an original and favorite plan of mine, and I was glad to find it approved by any person of intelligence. In the fall of 1859 I went to England, and the publication of my work was delayed till my return.

In May, 1860, Mr. Saunders' Prize Essay on Grape-Culture, written for the *Farmer and Gardener*, of Philadelphia, was published, in which he says: "Close planting" (in the grapery, viz., two feet apart) "*allows* the cutting down of a cane *occasionally*, or each alternate cane yearly, *as may be de-*

sired," but he does not present it as a special system, nor does he recommend it at all in that essay for *vineyard culture;* on the contrary, he advises only the old two-armed system with upright shoots.

Now, if there is anything in my work on the Grape new or valuable, I feel assured it is this single stem, dwarf, and renewal system; and I claim that I wrote my work, announced its publication, and put my method in practice, in Mr. Saunders' own neighborhood, months before he alluded to it in the article referred to. I further claim that I am the only person who has ever proposed this system, as adapted to the *vineyard culture of native grapes*, which I consider the chief important point at issue.

A few words as to the merits of this method of culture. I think the horticultural profession generally do not understand the nature and extent of my system. I propose to cultivate native grapes with as much care and precision as we do the foreign kinds, and to produce large crops of perfect grapes and large bunches free from rot and mildew. In the first place, I require that the vine shall be planted shallow, in soil not over-rich, and the roots kept near the surface by mulching and top-dressing. Next I demand, as a requisite to success, that the cane shall be grown as a dwarf, not over three to six feet long, and kept constantly concentrated within that limit by summer pinching, and that the laterals shall be stopped at least four times during the season. No wood of any consequence must be grown to be cut away at the fall pruning. If the vine be weak, the leader must be stopped several times. When the cane is fruited, *only one bunch* must ever be left on each shoot, and the shoots must be stopped as soon as the fruit is set at two joints beyond the bunch, and the stopping process must be continued on the shoots and laterals, leaving one new leaf on each new joint each time of stopping, until the stoning commences. Nor must the shoots or laterals be allowed to extend to three or four joints, either while growing the canes or when fruiting, before this stopping is performed. My idea is to cultivate the native as carefully as we are compelled to do the foreign vine, in a pot; and if this is done, I am sure the result will be in the highest degree satisfactory. If the best possible table grapes be desired, I would advise thinning the bunches as we do in the grapery, and I would also limit the length of the cane to three feet or less. After fruiting, then cut down the entire cane, leaving only two or three eyes on the *last year's wood*, and take a whole year to produce a new cane before fruiting again.

Now, will anybody assert that this system of growing grapes is not new, or that I was not the first to announce it and to put it into practice? On the contrary, in its application to native grapes in the vineyard, is it not yet a question with some of our best grape-growers, whether it will answer? Attached to Mr. Saunders' Prize Essay on grape-culture, lately published, are two other essays. In one of them, by Mr. F. J. Cope, the author, says: "I am convinced, by experience and observation, that no [native] vine can very long maintain its original vigor, which has been for a series of years annually pruned in nursery style." Again: "The healthiest and most prolific vines I have ever seen are those that had never been pruned at all." The other essay is by J. M. McMinn. He says, "Our [native] vines will only endure a moderate amount of pruning; the too free use of the knife on them produces disease, and invariably shortens their life. We have seen fine natives hopelessly ruined by theoretic pruning."

These are the ideas generally entertained by very intelligent grape-grow-

ers. It is thought that the native grapes must be allowed to grow in a wild, rambling form, over high trellises or trees, and that any attempt to prune or restrain them will be fatal to their health and fruitfulness. On reading such writing as the above, one would suppose that it would be dangerous to stop a rampant shoot or lateral, or even to take off excess of fruit. "To attempt to confine the growth to mere stakes," says Mr. McMinn, "will prove a failure on all our American species."

This declaration I feel ready to meet with another. I assert, that when grown as dwarfs upon my system, the native vines will not only retain their health and vigor for an unlimited number of years, but that I can produce upon a cane not over six feet long, a crop of native grapes, having six qualities required for perfection in grape-growing, (viz., ripeness, perfect color, high flavor, size of berry, size of bunch, and weight,) that will excel in all, or a majority of these points, any crop that can be grown upon any unrestrained cane of equal age, six hundred feet long. You may extend your vine over half a dozen trees, if you like, and I will keep my dwarf tied to a "mere stake." I shall soon be ready to show canes and fruit, grown upon this system, both of native and foreign kinds. I wish to see the question reduced down to "dots." Let the matter be tested, and let facts decide. I am ready to abide the issue.

One thing I request the profession to notice. I do not prune or use the knife upon my dwarfs during the process of growth, except to cut down the entire vine every second year. I pinch in the leader, the shoots, and the laterals, while yet tender, and only direct the force of the sap in new directions, *gently*, so as not to give a violent check to the cane at any time. I know very well that the vine will not endure the severe pruning of large branches, or even of strong shoots and laterals, without injury. I avoid this evil by not permitting unnecessary wood to grow at all. Hence, I do not prune severely. My practice is based upon "stopping," not pruning. If I could only "stop" the spread of error and falsehood as easily and as successfully as I can stop the useless and injurious growth on my vines, I think I should be tempted to turn preacher at once.

[Our remarks last month were simply intended to supply what had been deemed an oversight, and to place before our readers the facts in the case, so far as we had knowledge of them. The article in the *Gardener's Monthly*, which we supposed to be on the same subject, relates, we find, to regulating the temperature of vine borders. Mr. Bright has now furnished the facts on which he bases his claim to be the originator of the "single stem, dwarf, and renewal system," and we must do him the justice to say that he has presented them in a fair and good-tempered manner, offensive to no one. It is much to be regretted that controversies of this kind, among professional men, are sometimes conducted in a spirit befitting only a modern politician; such a spirit ought to find no place in horticultural literature, for it is a libel on its humanizing influence. We have no interest in this subject beyond laying the facts before our readers. In regard to the merit of the system, that is a point on which there will be a wide difference of opinion among professional men. We think it desirable to give it a trial on our "natives," and have planted the vines accordingly. We "go in" for progress, and if there is any merit in a new thing, we have always aimed to find it out speedily. The objection to close planting will not hold good, at least in the grapery. Charles Butler, Esq., has a grapery 500 feet

long, in which the vines are planted two feet apart, and fruited annually. The grapes in that house, for size of bunch and berry, quality, &c., are equal to the best we ever saw, and far above the average in these respects. His gardener, Mr. Ellis, it is true, is a skillful man, but that is an excellence which all gardeners should possess. It is just such men as Mr. Ellis and Mr. Chorlton that we should like to have try the single stem renewal system, as applied to the vineyard. By the time they get that fairly under way, we shall have another to propose to them from a different quarter. Any reasonable thing we feel bound to try.—Ed.]

IS THE SEED A NECESSARY PART OF THE FRUIT?

BY A YOUNG POMOLOGIST.

The theory of some horticultural writers, that in the most of our cultivated fruits the *fruit* is but a swollen capsule, inclosing the true fruit, the seeds, always seemed to me sufficiently reasonable to be accepted without much investigation; and the occasional occurrence of a variety of which the seeds are generally abortive, did not appear worthy of being received as aught but an exception. This season, my adherence to the theory has been severely shaken by the circumstance which I am about to relate.

It may not have escaped your memory, Mr. Editor, that in June last (1859) a frost of terrible severity devastated orchards and gardens to an extent rarely experienced. I at first was not alarmed for my fruit, a cursory examination satisfying me that the most of the crop was safe; but being incited to a more thorough investigation by the fearful reports of my neighbors, I was appalled by the conclusion which forced itself upon me. Upon cutting transversely through the cores of a large number of apples and pears, I found a very small proportion apparently sound—on some trees, scarcely any; of the remainder, the core was blackened, and the seeds, to all appearances, quite destroyed.

I at once gave up for lost the greater part of my crop, and expected to see the young fruits shortly dropping from the trees, leaving but an occasional specimen. Many did so fall, but I was surprised at the quantity which remained, although I did not fairly allow myself to be convinced that they were safe, until the season was far advanced.

The summer varieties were shortly approaching ripeness, and I found a large number of pears, when fully mature, wonderfully gritty at the core: so woody were they, that to cut one across was nearly as difficult as to sever a branch.

Attributing this, of course, to the action of the frost, I expected to find the later varieties similarly affected; but in this I was pleasantly disappointed. Pears, as a general thing were rarely finer, and even on trees where I had scarcely found any sound specimens, there was a fair crop. Even many of the fragments left attached to the tree after amputating the larger portion, swelled to a fair size and ripened well, although there was but the vestige of a core, no entire seeds (usually none at all) remaining. These specimens bore some resemblance to an obtuse fig, the dissected portion cicatrizing with a brown scar, and the cut edges closing over with a rounded lip.

This fact seems to me to conflict with the theory before mentioned, and would appear to indicate that a fruit is a *fruit* after all, and *not* a capsule, fleshy or not fleshy. If the existence of the fruit is secondary to that of the seed, why should the former swell and ripen, without the presence of the latter?

Grapes, when the seed fails to set, rarely swell to any extent; I had many bunches spoiled for this reason by the frost. And I had sent me a most beautifully formed miniature bunch of Hamburgh, in which there was not a seed, nor was there a berry much larger than duck shot, yet all perfectly colored and ripened.

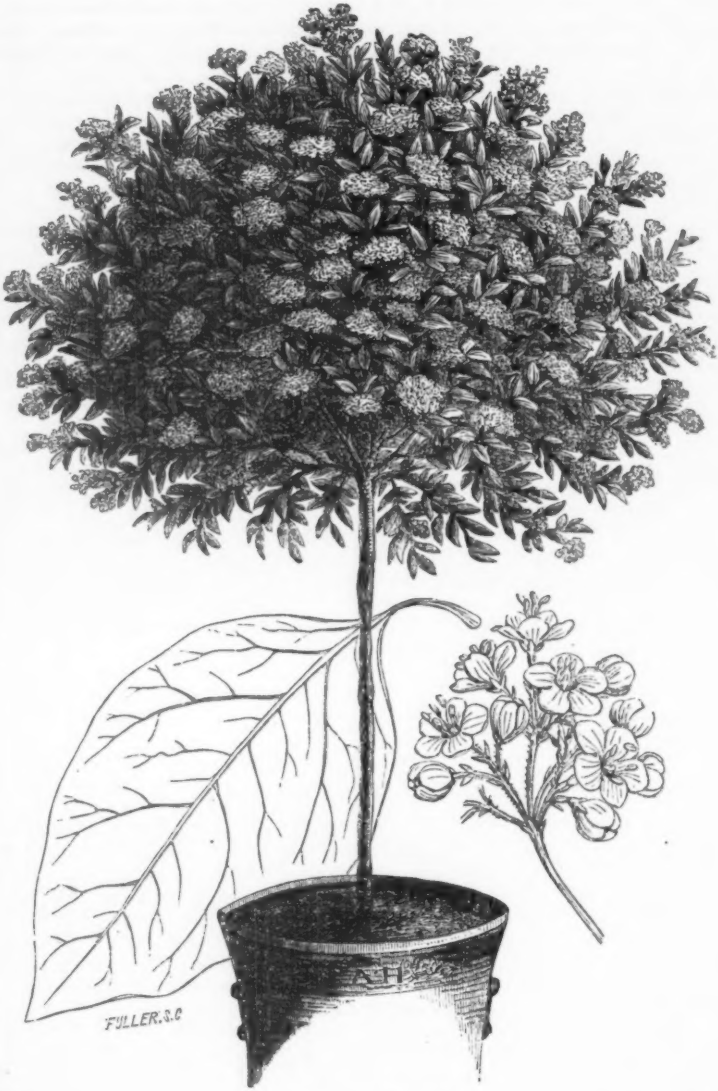
These injuries were undoubtedly the result of cold acting upon the flowers, when about setting, and I do not see why the pear fragments should swell and the grapes not do so, except for the reason that the pears were injured *after*, and the grapes *before* setting.

I should like to see the opinions of yourself, Mr. Editor, and any of your correspondents who have investigated these points, for I do not remember any authority which quite covers the case.

[A "Young Pomologist" has opened an interesting question, which some of our readers may feel disposed to discuss, especially in its botanical bearings, which we may refer to again. *Pomologically*, we do not consider the seed a *necessary* part of the fruit, though generally present; for we have seedless Grapes, Oranges, Persimmons, &c., and it may not have escaped the notice of our young friend, that the effect of high culture and hybridizing is to reduce the number and the size of seed in fruit generally. We think the influence of the frost will sufficiently account for the small size of his grapes, without recurring to the absence of seed. We have now before us some samples of Black Hamburgh Grapes from Mr. Ellis, in all respects beautiful; bunches weighing two pounds, berries large, well colored, with a very handsome bloom, all indicating a high degree of culture; but not one berry in six has a seed in it; and this fact we have often noticed in the best grown grapes. If a "Young Pomologist" will direct his observation to points like these, we think he will find additional testimony that "the seed is not a necessary part of the fruit." We hope he will do so, and let us know the result.—Ed.]

VIBURNUM NITIDUM.

In our account of the April exhibition of the Brooklyn Horticultural Society, we spoke of a *Viburnum nitidum*, shown by Mr. Menand, as being a "splendid plant." Our artist, Mr. Hochstein, being present, we requested him to make a drawing of it, which we now give to our readers. We applied to Mr. Menand for the age of the plant, telling him of our purpose to "do it up," and his reply rather surprised us: "The 'knowing ones' would only laugh at you and me if we should say anything about such an old plant." We have a better opinion of them; and we only mention the circumstance to say, that if there are any among the "knowing ones" so ill-mannered, we can promise to keep them "on the grin" till they get tired of it. The plant is an old one, undoubtedly, but such specimens are as rare as the plant is common. We present it as a specimen of skillful and judicious culture, and as such valuable to our young readers as a standard to which they can direct their best efforts. The present specimen is about fifteen years old.



VIBURNUM NITIDUM.

The naked stalk is about four feet high; the whole plant about nine feet high. The head of the plant is over *twenty-two* feet in circumference, very symmetrically formed, and at the time we saw it was well covered with bloom. The natural size of the leaf and flower is shown in the engraving. The plant is now the property of Charles Durant, Esq., of Brooklyn, having been purchased by him at the close of the exhibition. We commend it to the notice of our young friends as a good example of what can be done, and hereafter we shall tell them how to do it. It may probably enlighten some of them a little to say, that the Viburnum nitidum is the shining-leafed *Laurustinus*, a great favorite with the ladies, and deservedly so.

A PLATE OF CHERRIES.

See Frontispiece.

Our *Frontispiece* for the present month represents a group of Cherries, some of which are so well known as hardly to need further illustration. Some of the names we should have preferred to change, if the plate had not been already printed; we must therefore be content with them as they are. We must add, too, that some of the figures in the plate are not equal to the originals, and fail to give an accurate idea of them.

1. Early Swedish, or, more properly, *Early White Heart*, which is the name, also, by which it is generally known. It is a good old early variety, though not equal to some others of the same season. The fruit is below medium size, oblong heart-shaped, sometimes a little one-sided. Suture quite distinct. Stalk an inch and three-quarters long, rather slender, and inserted in a wide, shallow cavity. Skin a dull whitish yellow, tinged and speckled with pale red in the sun. Flesh half tender, but when fully ripe melting, with a sweet and pleasant flavor. Ripe about the first of June.

2. *Triumph of Cumberland.*—The figure in the plate is not quite large enough. Fruit obtuse heart-shaped, sometimes roundish. Skin deep crimson, but nearly purple when fully ripe. Stem rather long, slender, and inserted in a broad, open cavity. Flesh rather solid, red, and slightly adhering to the stone. It is considered an excellent cherry. Ripe about the middle of June.

3. *Baumann's May*—Fruit rather small, oval heart-shaped, and rather angular in outline. Stalk an inch and three-quarters long, pretty stout at both ends, and set in a very narrow and rather irregular cavity. Skin deep rich red, becoming rather dark when fully ripe. Flesh purplish, tender, juicy, and when fully ripe tolerably sweet and good. Ripens about the 20th of May, and is very productive.

4. *Black Tartarian.*—The figure in the plate is an imperfect representation of this old and popular cherry. Fruit of the largest size, heart-shaped, irregular and uneven on the surface. Stalk long and stout, inserted in a large cavity. Skin glossy, purplish black. Flesh purplish, half tender, and juicy, with a rich and delicious flavor. It ripens about the middle of June, and is very productive.

5. *Bigarreau Monstreuse de Mezel.*—This was not long since introduced from France. The figure is under size. Fruit very large, obtuse heart-shaped, surface uneven, dark red, or quite black at maturity. Stem long and slender. Flesh firm and juicy, but not high flavored. Ripe last of June and beginning of July.

6. *Black Eagle.*—The figure in the plate is imperfect. Fruit above medium size, obtuse heart-shaped, borne in twos and threes. Stalk of medium length, and slender. Skin deep purple, or nearly black. Flesh deep purple, tender, and juicy, with a rich and high flavor. Ripens early in July, and is moderately productive.

MORE ABOUT THE DANDELION.

BY S. B. BROPHY, BROOKLYN, N. Y.

Mr. Stauffer having given a comprehensive account of the dandelion in the June number of the Horticulturist, I desire to add a word on that useful plant.

It is not "a Native American," and is known chiefly to professed botanists to be of European origin; by means of its feathery seeds, when separated from the disk, floating in the atmosphere, it is able to travel an immense distance.

Refined observations, particularly with the microscope, on portions of the atmosphere filtered through water, very often unfold a most motley group of travellers, among which are found the pollen of plants in large quantities, from an unknown distance, as none of the family were found where the observations had been made.

In a uniform state of the atmosphere, precipitation being prevented by the earth's motion, the myriads of floating travellers that come unsent for, are silently emigrating from one part of the globe to another, and thus we have the dandelion and other flora of the Old World, facing to the American continent, like members of the human family—many of them doing better here than at home.

Much has been said of the medicinal qualities of the dandelion, but chiefly of its root. I have known the Dublin Medical Faculty to have saved the life—or rather to have given length of days to many a consumptive by its use; but the prescription was, pounding the leaves in a mortar and squeezing its juice—dose, a wineglass full every morning.

Little has been done towards the cultivation of the dandelion, yet it is highly susceptible of improvement. Some three or four years since I brought from the open fields in spring-time a few plants of it, and planted them in the garden. They grew amazingly, so much so that they greatly exceeded my powers of consumption; and with a view to retard the growth, and therefore the bitterness of its leaves, I tied them together with a cotton thread and drew the earth up around them, and as they grew I kept the earth up to them just as I would blanch celery. The result was, in a few weeks the leaves thus covered became beautifully white, and instead of the coarse, bitter taste of the leaf when exposed to the open air, its crispy flavor was more like celery than dandelion. Its early appearance in spring gives it value as a vegetable, and if blanched as it grows, it will fully repay the labor and care bestowed upon it.

Last month I gathered a small quantity of its seeds, and sowed them in drills a foot apart in the garden in the manner of lettuce, and not knowing how they would germinate, I put a few lettuce seeds in each drill to show how the land lay, in case weeds should become troublesome, and now the lettuce and dandelion are equally forward, with promise of a fine crop of dandelion, upon which I intend to bestow the most distinguished consideration.

EDITORS TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

WE have received from friends a number of new and choice plants and seeds for trial, and shall discuss their merits from time to time as they come into flower. To save time, we desire to make our acknowledgments here. From Mr. Buchanan, New York, new Verbenas, Petunias, Gladioli, Ipomeas, &c. From Mr. Bliss, Springfield, Mass., new Verbenas, Petunias, Crassulas, Phloxes, &c. From Mr. Bridgeman, New York, new Dahlias, Heliotropes, seeds, &c. From Mr. T. Hogg, New York, new Tomatoes, Scarlet Egg Plant, Spergula pilifera, &c. From Mr. Quinby, St. Johnsville, N. Y. Taylor's Bullitt Grape. From Mr. P. Henderson, Jersey City, the new Chinese Pinks. From Mr. J. Henderson, Jersey City, new Fuchsias and Verbenas. From Messrs. Thorburn & Co., New York, a fine collection of seeds of new plants. From McIlvane and Young, New York, another collection of seed.

BOTH SIDES OF THE GRAPE QUESTION: comprising, I. An Essay on the Culture of the Native and Exotic Grape, by William Saunders, Germantown, Pa.—II. Physiography in its Application to Grape-Culture, by F. J. Cope, of Greensburg, Pa.—III. A Contribution to the Classification of the Species and Varieties of the Grape-Vine, with Hints on Culture, by J. M. McMinn, of Williamsport, Pa.—We have not been able to give this little volume more than a cursory examination, and shall only allude to it briefly at present. Part I., by Mr. Saunders, is the only really practical portion of the work. His directions for propagating and growing the vine are full and satisfactory, and give a decided value to the work. He presents some good plans for graperies, giving a preference to the fixed roof, and very properly. He also recommends inside borders and close planting; and in regard to the former, we take occasion again to commend them emphatically, especially for the forcing house. He falls into a grave error, however, in saying that inside borders will not require a thorough watering more than once in *six weeks*, even during the most active period of vegetation. During more than fifteen years' experience, we have found a pretty copious watering indispensable *every day* till the vines get sufficient age to shade the house, and after that about once a week. Local causes will somewhat modify the practice, but under any circumstances the floor of the house should be well sprinkled every day. We have lessened the labor of watering by contrivances which we shall figure hereafter. But even with a thorough watering daily, we should, as a general thing, prefer the inside border. Mr. S. gives the Delaware rather a cold shoulder. We are sorry the printer should not have done his part of the work better: he converts Mr. S.'s "feet" into "inches," his "bunches" into "branches," &c., &c.—Part II., on Physiography, is by Mr.

Cope. This is a well-written effort, but the author's propositions, on the whole, we dissent from, and shall take occasion hereafter to review them in detail.—Part III., on Classification, is by Mr. McMinn. This is a subject well calculated to task a man's best efforts. We shall probably differ considerably from the author in his classification, but we can not do him justice with only the slight examination we have been able to give his essay. We must look at it more at leisure. In the mean time, we must express our surprise at his list of grapes which he says are considered "very best" in different states. He is certainly entirely at fault as regards New York.

HARPER'S NEW MONTHLY.—The June number is quite equal to its predecessors. Contents: A Summer in New England—One year ago—Ancient Monuments in the United States—Insects belonging to the Cotton Plant—The Century Plant—Sullivan's Island, a Ballad of South Carolina—Froth—The First Overland Trip to California—"He was always such a Fool"—Lovell the Widower—"Miserable Man that I am"—Only Words—Monthly Record of Current Events—Literary Notices—Editor's Table, &c.

BLACK HAMBURGH GRAPES.—Mr. Ellis has just placed on our table some splendid Black Hamburgh Grapes. Some of the bunches weigh two pounds each; others a trifle less. The berries are finely colored, well ripened, with a handsome bloom, and are in all respects first rate. Mr. Ellis is "hard to beat" in growing grapes.

SEEDLING STRAWBERRIES.—A few days since, in company with Messrs. Saxton, Pardee, and Hite, we visited Mr. Fuller, to examine his bed of seedlings. We were much surprised at the large proportion of fine kinds contained in this bed, and marked a number of them as worth keeping. Some of them were of such decided quality, that we made drawings of them, which we shall hereafter present to our readers.

SUSQUEHANNAH AND CHEMUNG VALLEY HORTICULTURAL SOCIETY.—We are indebted to the politeness of the officers of this Society for a complimentary ticket to attend their Summer Exhibition, which took place at Havana, N. Y., on the 20th and 21st of June. A previous engagement alone prevented us from mingling with them on this pleasant occasion. We should be obliged to their Secretary for an account of the exhibition. We notice a commendable feature in their prize list, which ought to be more common, viz., a division of the competitors into amateurs and professional men. We append a list of the officers for 1860: *President*, Col. E. C. Frost, Havana; *Vice-Presidents*, Gen. R. B. Van Valkenburgh, Bath; Hon. Asher Tyler, Elmira; L. M. Rexford, Esq., Binghampton; Hon. E. S. Sweet, Owego; *Cor. and Rec. Secretary*, E. P. Brooks, Esq., Elmira; *Treasurer*, John M. Dexter, Elmira; *Executive Committee*, Harvey Luce, Elmira; N. Winton, Havana; D. Decker, Elmira; T. L. Baldwin, Tioga, Pa.; F. H. Baldwin, Waverly; John M. Parker, Owego; Geo. Farnham, Addison; J. M. Dexter, Elmira; A. I. Wynkoop, Chemung; O. Spaulding, Waverly.

DINSMORE'S RAILROAD AND STEAM NAVIGATION GUIDE.—A reliable and indispensable hand-book for travellers and others. The price has been reduced to 15 cents, which places it within the reach of all.

THE SWEET POTATO CULTURIST.—This a small hand-book by J. W. Tenbrook, proprietor of the Parke Nursery, Rockville, Indiana, containing practical directions for cultivating, marketing, and preserving the Sweet Potato, and embracing the experience of a large number of growers. It is a useful little book.

THE CRANBERRY CULTURIST.—This is a very useful compendium by Mr. W. H. Starr, of New London, containing practical directions for the culture of the plant, descriptions of the best varieties, and other necessary information relating to flooding, selection of kinds, &c.

THE name that you want, Mr. Henderson, is B. Stratton. This is the only way in which we can answer your inquiry, since you, like many others, failed to send your post-office address.

SEEDLING GRAPES.—"It never rains but it pours;" which is just now true of Grapes. From almost every quarter friends write us about the number of seedlings they have, and what they expect from them. A goodly number will certainly be disappointed, but we shall doubtless in the end obtain a few choice kinds. Dr. Wylie, who has been hybridizing with a specific object in view, writing from Chester C. H., S. C., says: "I have about three hundred seedling grape-vines growing finely, composed of all our best natives, fertilized with the best foreign. The most interesting are the Delaware and Scuppernong, crossed with the foreign; the former with Black Hamburgh, Syrian, and Muscat of Alexandria, and the latter with the Royal Muscadine. The seedlings clearly show the cross by their foliage, which is most striking. This year I have gone into it extensively. I am inarching some of my seedlings on strong stocks, and expect to force them into bearing next year."

THE WAY TO STOP A PAPER.—The following from the *Urbana Citizen and Gazette* will do to pass round. "If you wish to stop a paper, pay for it in full to the time when you cease taking it, as an honest man should do. Don't go sneaking to the postmaster, and tell him to send your paper back 'refused,' but send your bill, deposit the amount with the postmaster, and ask him to forward it; or what is a much better way, go to the office of publication yourself, and pay your honest dues like a man. Some people complain that they *can't* stop a paper they have once subscribed for, but there is no difficulty in it if you take the right way. Pay up all you owe, and then if the paper be continued contrary to your orders, you are not liable for it. Don't undertake to cheat the printer out of his due, whether it be ten cents or ten dollars. You have had the benefit of his labor, and are bound, upon every principle of justice and fair dealing, to pay for it."

STRAWBERRIES.—We are indebted to Mr. Fuller for several baskets of Strawberries, very large and fine, embracing *Brooklyn*, (a very fine seedling,) *Reine Hortense* (a new variety of large size and fine flavor,) *Vicomtesse Hericart de Thury*, *Wilson's Albany*, *Scarlet Magnate*, *Brighton Pine*, *Hooker's Seedling*, and some older kinds. We should be doing great violence to our feelings if we failed also to acknowledge from Mrs. Fuller a large and delicious *Strawberry Short Cake*, for which she will please accept our best thanks. A number of friends happening in at the moment, the cake afforded us an opportunity of getting up an impromptu Strawberry festival. The affair went off finely, with the customary vote of thanks to Mr. and Mrs. Fuller for the bountiful repast. Mr. Hite will also accept our thanks for very fine Wilson's Albany.

THE AUSTIN STRAWBERRY.—This, up to our last moment of writing, (the 20th,) has not been sent to our office, from which the reader can draw his own inference. We saw the fruit, however, at the Farmers' Club, a few days since, and found it to be of large size, but somewhat soft and deficient in flavor. How it will compare with the Wilson for productiveness we can not say positively.

HORTICULTURAL SOCIETY OF MORRISANIA.—This young Society, we learn from the Secretary, Mr. Willcox, recently held a meeting, at which they elected their officers, and appointed the 3d and 4th of October for their Fall Exhibition. David Milliken was elected President, and W. W. Fox, Adrian Janes, C. Moger, R. L. Anderton, and Benjamin M. Whitlock, Vice-Presidents. William H. Willcox, Recording Secretary, J. L. Parshall, Treasurer, and James Stillman, Librarian. We, it seems, were elected Corresponding Secretary, though we have heard nothing of it yet. At the rate at which they are "doing us up," we shall next expect to hear that we have been made R. S. or something else of the Horticultural Society of the Sandwich Islands. It would be just as convenient.

QUEEN'S COUNTY AGRICULTURAL SOCIETY.—The nineteenth Annual Exhibition of this Society will be held at Jamaica, on Wednesday, the 19th of September. The Judges for the various departments have been appointed, but the prize list has not yet been completed.

SAVING SQUASH SEED.—Many plans have been suggested for saving Squash and Melon seeds pure. The following, furnished to the *Rural New Yorker* by the Rev. Mr. Langstroth, would seem to be a good one. The process might be simplified by tying the ends of the blossoms together with a string.

"Rise in the morning by break of day, before the bees are abroad. Select a number of female blossoms which have opened during the night. They may be known by growing on the end of the young squash, melons, &c., while the male blossoms ('false blossoms,' as they are called) have no fruit. Scatter the pollen of the male blossoms upon the stamens of the female ones, and carefully cover the latter with millinet, or anything which will protect them from the visits of the bees. A piece of cotton cloth, or even a squash leaf, kept in place by a few clods of earth, will answer a good purpose. When the blossom withers the covering may be removed, and the fruit marked by a colored string tied loosely around the vine."

The post-office address of Mr. Willcox is box 348 instead of 365.

THE JAVA COFFEE POT.—We have now given this a fair trial, and find it to be a really good thing; it is a considerable economy, too, and we are content with it.

EARLY PRINCE IMPERIAL RHUBARB.—We received a box of this new Rhubarb from Messrs. Barnes and Washburn, of Dorchester, Mass., and have given it a trial. The stalks are not large, but are of a pretty ruby color, tender, with a mild, pleasant flavor.

PROGRESSIVE GARDENER'S SOCIETY.—We have received the Rules and By-laws of this Society, with a list of the members, &c. The officers for 1860 are as follow: *President*, William Saunders. *Vice-President*, William Grassie. *Secretary*, R. Robinson Scott. *Treasurer*, John Gurney.

CALIFORNIA CULTURIST.—We are now in regular receipt of this well-printed and well-edited monthly. It gives a good indication of the progress of Horticulture in California, and we hope is being generously supported.

CALIFORNIA FARMER.—This is another California friend which we welcome to our "table." The farming interests of California are well cared for by Col. Warren, and we hope he is well cared for in return.

EASTERN FARMER.—This is a new weekly, which has just made its appearance at our "table." It is published at Ellsworth, Maine, by Messrs. Wasson and Moor. Samuel Wasson, Editor. Price $1 per annum.

THE ATLANTIC MONTHLY.—The June number of this sterling monthly is at hand. Contents: The Future of American Railways—In a Fog—The Granadian Girl's Song—The Humming Bird—Chess—Spring Song—Model Lodging Houses in Boston—A Short Campaign on the Hudson—Thine—The Representative Art—Roba di Roma—Pythagoras—Clarian's Picture—Japan—The Vineyard Saint—The Professor's Story—The Sphinx's Children—Reviews and Literary Notices, &c. But why does the Atlantic write us down the Horticultur*al*ist? Elsewhere it would not look quite so bad.

AMERICAN POMOLOGICAL SOCIETY.—We have received the following Circular from President Wilder; its importance will claim for it the attention of every pomologist in the country.

The work of the society will be greatly promoted, and its labors much simplified, by complying with the suggestions of the circular, and we hope this will not be overlooked.

CIRCULAR.

The Eighth Session of this institution will be held in the city of Philadelphia, commencing on the 11th of September next, at 10 o'clock A. M., and will be continued for several days.

This Society, the first National Institution for the promotion of Pomological Science, was organized in the year 1848. Its sessions have brought together the most distinguished cultivators of our country; its transactions have embodied the various researches and ripest experience, and its Catalogue of Fruits has become the acknowledged standard of American Pomology.

Its example has created a general taste for this science, inspired pomologists with greater zeal, and called into existence many kindred associations. Its progress has been remarkable and gratifying, but it still has a great work to perform. Its general catalogue should, from time to time, be enlarged and perfected, and local catalogues formed, embracing the fruits adapted to each State and Territory of the Union. The last of these suggestions was made by the Chairman of the General Fruit Committee, at the seventh session of the Society, in the year 1858. This has been carefully considered, and is deemed worthy of special attention. It is, therefore, earnestly recommended that each State Pomological, Horticultural, or Agricultural Society, charge its Fruit Committee with the duty of collecting information, and presenting the same, with descriptive lists of Fruits adapted to their location.

The importance of this subject, and the increasing value of the fruit crop of the United States, call for a prompt and cordial response to this request, for a careful preparation of said list, and for a full and able representation, at the approaching session, from all parts of the country.

The various State Committees of this Society are expected to submit accurate and full reports of the condition and progress of fruit culture, within their limits, together with definite answers to each of the following questions. These reports, it is desirable, should be forwarded to the Chairman of the General Fruit Committee, Hon. Samuel Walker, Roxbury, Mass., if possible, as early as the 1st of September, or to Thomas W. Field, Esq., Secretary, Brooklyn, New York.

What *six*, *twelve*, and *twenty* varieties of the apple are best adapted to an orchard of *one hundred* trees, for family use, and how many of each sort should it contain? What varieties, and how many of each, are best for an orchard of *one hundred* trees, designed to bear fruit for the market?

What *six* and *twelve* varieties of the Pear are best for family use on the Pear stock? What varieties on the Quince stock? What varieties, and how many of each of these, are best adapted to a Pear orchard of *one hundred* or of *one thousand* trees?

What are the *six* and *twelve* best varieties of the Peach? What are the best varieties, and how many of each, are best adapted to a Peach orchard of *one hundred* or of *one thousand* trees?

Answers to these questions should be made from reliable experience, and with reference to the proximity or remoteness of the market.

Held, as this convention will be, in a city easily accessible from all parts of the country, it is anticipated that the coming session will be one of the most useful the Society has ever held. Societies, therefore, in every State and Territory of the Union, and the Provinces of British America, are requested to send such number of delegates as they may choose to elect. Fruit-growers, Nurserymen, and all others interested in the art of Pomology, are invited to be present—to become members, and to take part in the deliberations of the Convention.

In order to increase as much as possible the interest of the occasion, members and delegates are requested to forward for Exhibition as large collections of fruit as practicable, including specimens of all the rare and valuable varieties grown in their respective districts, and esteemed worthy of notice; also, papers descriptive of their mode of cultivation, of diseases and insects

injurious to vegetation, of remedies for the same, and to communicate whatever may aid in promoting the objects of the meeting. Each contributor is requested to make out a complete list of his contributions, and present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as soon as practicable after its organization.

Societies will please transmit to the Secretary, at an early day, a list of the delegates they have appointed.

Gentlemen desirous of becoming members can remit the admission fee to Thomas P. James, Esq., Treasurer, Philadelphia, who will furnish them with the transactions of the Society. Life Membership, twenty dollars; Biennial, two dollars.

Packages of fruit may be addressed to Thos. P. James, 630 Market street, Philadelphia.

THOMAS W. FIELD, Secretary, *Brooklyn, New York.*

MARSHALL P. WILDER, President, *Boston, Mass.*

THE PROGRESSIVE GARDENER'S SOCIETY, PHILADELPHIA.—This Society holds stated meetings for the discussion of subjects pertaining to Horticulture, and it would be well for the cause if all similar Societies held meetings for a like object. These discussions, in many instances, possess more than a local interest, and are worthy of a general perusal, and we therefore place a portion of them before our readers. We are indebted for them to the Secretary, R. Robinson Scott, who will please accept our thanks. The subject at the last meeting was "*Heating Glass Structures.*" Elsewhere we also print a discussion on *Manures.*

The subject of heating by hot water had been set apart for consideration for this evening, but the essayist, whose duty it was to introduce the subject, was absent. The general subject of heating glass structures was very fully discussed, notwithstanding.

William Saunders, acceding to the request of several members, opened the discussion by excusing himself from presenting any specific branch of the subject; he had not recently studied the various methods of heating. Great progress has been made, even in his own time, in the introduction of heat artificially to plant houses. The *brick flue* was the rudest mode known to him, which was not without its advantages, and he could not wholly discard it. One objection to it was waste of fuel and the production of an unequal heat over the house. The method of heating by hot water was a great improvement on the flue, as water was one of the best conductors of heat, while air was one of the worst. The hot water system economizes fuel and gives out a regular heat: these are its two great advantages. It is also more easily controlled by the cultivator. Much of its efficiency depends, however, on the style of boiler and quantity of heating surface exposed to the fire. We still want a perfect boiler, as all those invented, or in use as known to me, are imperfect, and I have seen most of them either in use or have read descriptions of their peculiarities. We still want a boiler which will present a larger heating surface to the fire. The old saddle boiler was one of the first forms; at present we have Weeks's cumbersome apparatus, and Burbridge & Healy's, with several others. One of the most convenient and economical boilers I have seen, was that invented by Stephenson, made of copper; it is very quick in operation, but has not been introduced here. A system, consisting of a series of small pipes, was in use, around which the fire played; but the defect in this was, that the pipes soon burned out, and it was subject to explosion. Boilers of the same form as those used for locomotives have also been employed to heat houses, and have answered well enough. There is a great saving effected by heating several houses with one boiler. This is managed by having a chamber into which the several pipes flow, and from this chamber the several houses are supplied, the connection being made or cut off by stop-cocks attached to the several pipes at this chamber.

T. Myers did not feel disposed to say much on this subject, being properly an interested party. He had no objections, however, to afford the members any information he possessed. (Throughout the evening he explained many points when questioned by the members.)

R. R. Scott commended the prudence of Mr. Myers. It might indeed be insinuated, under

other circumstances, that an interested motive existed; but associated as we are here, to increase our individual knowledge by imparting it in exchange for that of our fellow-members, we shall recognize no such insinuation as having any force. We have all had more or less experience in this matter; what we aim at is to benefit by the accumulated experience of all. This is a special department of Horticulture, and it is not to be expected that gardeners are intimately acquainted with the mechanical details; therefore we desire to be instructed by so competent a constructor as Mr. Myers.

Mr. Myers wished to urge the superiority of cast iron over wrought iron boilers. Tubular wrought iron boilers are now made, but they require renewal, as they wear out soon.

William Walter spoke of copper pipes being very effective, and much used in Paris in graperies. The apparatus is made so portable that it is removed in spring and replaced towards winter. He had used a method of heating by hot water, which differed from others; he applied it to a forcing pit. It consisted of a sheet iron pan, twenty feet long, to which were connected leaden pipes, and covered on top with boards; over these boards tan was placed, and on the tan the soil. This system afforded a moist heat very congenial to plants; and in this pit he had raised fine cucumbers in the middle of January, without establishing the plants in pots. This is a modification of the tank system.

William Saunders.—Copper pipes had their advantages. They become heated rapidly, but part with the heat as rapidly. A house can be heated in a comparatively short time by copper pipes. Tanks had been in use, but the difficulty of making them perfectly tight was a defect, and they have been discarded. The escape of steam was also an objection, as it was injurious to plants in many cases. Tanks might be used in connection with pipes.

Walter Elder.—I have had but one opinion on the various systems of heating, and my preference is for hot water. I would have the old system universally abandoned, of carrying the smoke through the house in brick flues, sheet iron pipes, or earthen-ware cans, especially in private establishments. The heat from these is arid and injurious to many kinds of hard-wooded plants, such as the Camellia, Azalea, Acacia, Epacris, Erica, &c., &c. These suffer from it in severe winters. Frequently, though you may syringe, the soil in the bottom of the pots becomes as dry as dust, while the surface may be quite moist, at least those pots standing on the shelves and front tables. The heat from hot water pipes is more congenial to plants, and diffuses itself more equally throughout the house; so much so, that it is scarcely perceptible whence it proceeds. A proof of its suitableness may be found in the fact that the dew remains much longer on the leaves where hot water is employed. The sulphur and other disagreeable smells, perceptible in houses heated by the flue, are evidence of the great advantage of hot water over the old flue system.

James Eadie would not entirely discard flues, but would employ both systems in connection, by carrying the smoke channel along the house. If the flue is properly constructed, little gas can escape. The method of having the fire surrounding the pipes is dangerous, as was ascertained in the case of the Great Eastern. Saddle boilers in some cases work very well, and cannot be condemned. There is a great defect in setting Burbridge & Healy's boiler, so far as eighteen or twenty inches above the furnace, rendering much more coal necessary to raise the heat. Could see no reason why a plate of cast-iron should not take the place of brick in setting the boiler, thus connecting the *rest* for the boiler, with the boiler itself; apertures could be left at the sides for the escape of the fire to the sides of the boiler.

Mr. Myers, in reply to a question as to the effect of dipping the pipes below a doorway, for instance, stated that it had better be avoided, if possible; yet that under certain restrictions the boiler would act, but at a disadvantage; the higher the pipes above the boiler, the more effectual and easier the current.

James Eadie.—The idea that the dipping of the pipe is new, was quite erroneous; it had been practised in England years ago, as well as in this vicinity, in Montgomery county.

Mr. Polleck made some remarks in corroboration of this position. Several other members recorded their experience, when the subject was laid on the table for future consideration.

The usual hour of adjournment not having arrived, the subject of "*Indigenous and Exotic Grapes*" was, on motion, taken up for discussion; quite a lively and interesting conversational debate ensued, which was participated in by Prof. Stephens, William Saunders, James Eadie, James Jones, H. Pettigrew, R. R. Scott, and others. We must reserve a report for another occasion.

Members elected. *Honorary:* Dr. John A. Kennicott, Chicago; James Bisset, Sr., Washington, D. C.; William Graham, Blockley. *Resident:* J. F. Knorr, William Anderson, gardener to J. N. Dickson, Esq.; Hugh Pettigrew, West Philadelphia.

The subject set apart for May 14th is "*Manures.*"

BARTLETT'S POLAR REFRIGERATOR.—We know this as an excellent invention for domestic use, but it has occurred to us that it might be valuable for keeping summer fruits, its cool dry atmosphere being favorable for that purpose. Have any of our readers tried it?

CATALOGUES AND BOOKS RECEIVED.

Illinois State Fair for 1860. Premiums and Regulations for the Eighth Annual Exhibition of the Illinois State Agricultural Society, to be held at the City of Jacksonville, on the 10th, 11th, 12th, 13th, and 14th days of September, 1860. Competition open to the world, except as noted in the Premium List.—A very liberal prize list, $15,000 being offered in premiums.

Wholesale Catalogue, or Trade List, of Fruitland Nursery, Augusta, Ga., for the Fall of 1860 and Spring of 1861. By P. J. Berckmans.—This is a circular for the trade or large purchasers.

The Presbyterian Parlor Magazine, a monthly Journal of Science, Literature, and Religion. Alfred Nevin, D.D., Editor. June, 1860.—This is the first number of a new monthly, the net profits of which are to be appropriated for the benefit of disabled ministers, and needy widows and orphans of deceased ministers of the Presbyterian Church. It is well printed, and has an able corps of contributors.

Monthly Record of the Rensselaer County Agricultural and Manufacturers' Society. Troy, June, 1860.—The object of the Monthly Record is to publish the doings of the above-named Society, and to collect and diffuse knowledge having a bearing on its objects. It may be made the instrument of much good.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, Greenhouse and Bedding-out Plants, cultivated and for sale at the Great Western Nurseries, Toledo, Ohio. F. Prentice, Proprietor.—A full and well-prepared Catalogue.

Wholesale Trade List of the Hickory Grove Nurseries, for the Fall of 1860 and Spring of 1861. Hall & Co., Proprietors, at the head of Broadway, two miles above the Oliver House, Toledo, Ohio.

The Journal of Rational Medicine. Edited by C. H. Cleaveland, M. D. June, 1860.

The Mother's Magazine and Family Circle. Rev. B. J. Relyea, Editor and Proprietor. June, 1860.

A Practical Treatise on the Management of Fruit-Trees, with Descriptive Lists of the most valuable Fruits for General Cultivation; adapted to the Northern States. By George Jaques.—Notice in our next.

A Dictionary of the English Language. By Joseph E. Worcester, LL. D. Boston: Swan, Brewer, and Tileston.—Notice in our next.

Correspondence.

DEAR HORTICULTURIST:—On Thursday last, the 7th inst., I enjoyed an opportunity of attending one of the monthly meetings of the "Meramec Horticultural Society," held at the residence of L. D. Votaw, Esq., near this village. The day was beautiful, and the society was convened under the broad-spreading branches of a magnificent native elm, on the bank of the Meramec River.

The meeting was presided over by J. C. Blakey, Esq., the President, Dr. A. McPherson, of Allenton, being absent on account of illness. There was an exhibition of a few early vegetables and small fruits, a few fine bouquets of flowers, and some clusters of a native wild plum, said to be of good quality, medium size, exceedingly prolific; and being quite thick skinned, the persevering attacks of the curculio are as harmless upon it as they would be upon a pumpkin. The subject for the day was, "The proper management of a young apple orchard," which elicited a good deal of discussion, and some information.

But the feature of which I wish particularly to make note, is the *social* character of this society. The family of each member is entitled to all the privileges of the society, except in a business point of view; the meetings are held at the private residences of the different members, all hands turn out to attend, participate in, and listen to the discussions, have a good dinner, and I "reckon" have "a heap" better time than you do down in New York at one of your formal parties. Would it not be advisable to engraft this "social feature" into all similar societies? I'm sure it would be a great subduer of vice, and promoter of virtue and social happiness. There is increasing attention being paid in this State to the various agricultural improvements of the day, and particularly to fruit-growing, and Norman J. Coleman, Editor of the *Valley Farmer*, published at St. Louis, Mo., at $1.00 a year, is taking no mean part in bringing these improvements to the notice of the inhabitants of his State, and inducing them to adopt them. A large portion of this country is new, and the wants of the inhabitants few, and "hog and hominy" will principally supply them; but wherever railroads have opened a communication with the rest of the world, they see they are clear behind, and are taking hold with a will to "catch up" and go ahead if possible.

Horticulture is sadly neglected; even in St. Louis we see the want of knowledge and cultivated taste wherever any attempts have been made at improvement in this department. If there were a thousand copies of the HORTICULTURIST studied where one is taken now, there would be a vast improvement in this respect in a few years, and it would be a *capital investment* both for publisher and people.

When I learn more of the "capabilities" of this State for *fruit-culture*, the advantage and disadvantage of climate, soil, aspect, &c., you may expect to hear from me again. Yours truly,

Eureka, St. Louis Co., Mo., June 11th, 1860. E. S. HOLMES.

P. S. An honest, honorable, scientific, and practical Landscape Gardener would find a good location in St. Louis. E. S. H.

[They do some things at the West much better than we. We approve heartily of the "social feature" alluded to by Mr. Holmes, and think that it might be adopted by our suburban societies with the happiest results. It would exercise a beneficial influence in controlling the petty envies and jealousies which so often mar and destroy their usefulness; and it would also greatly promote their social well-being. We are vain enough to believe that a free circulation of the HORTICULTURIST at the West would do much to develop and fix the public taste in all matters pertaining to horticultural pursuits; and we have the satisfaction of knowing that it is making its way there, but not to the extent that it should. We are glad to know that our brother Editor of the *Valley Farmer* is doing a good work there, and wish him abundant success.

We should like to know, Mr. Holmes, all you can learn about the capabilities of your State for fruit-culture. The P. S. will probably catch the eye of some of our Landscape Gardeners, who would do well to think of such an opening.—ED.]

PETER B. MEAD, ESQ.,

DEAR SIR,—Allow me to endorse what your correspondent "W., Washington Heights," has said respecting the Gishurst Compound.

Previous to the public announcement of this remedy Mr. Wm. Elliott, seedsman, of 31 John St., New York, gave me a portion, before recommending it to his customers. I tried it in different ways, and on several kinds of plants, and found that, dissolved in the proportions of from two to three ounces to the gallon of water, it was instant death to Thrips and Red Spider, and also quite effectual in extirpating mildew on roses and other plants in the greenhouse. It is a clean substance to use, and if it could be afforded cheaper, would, no doubt, become most extensively used for out-door purposes against all sorts of insects. Yours respectfully,

WM. CHORLTON.

[We can add our own testimony to the above. It is also good for the rose slug, or rather it is *bad* for him, and we suspect it will be found destructive to most of our plant insects. We should be glad to hear the result of other trials, in order that the extent of its value may become speedily known. We have caused it to be applied to a number of plum-trees, but it is too soon yet to speak decisively of the result. The price of the compound, however, will deter a great many from experimenting with it. It ought to be afforded for a much less sum.—[ED.

MORE ABOUT BOILERS.—DEAR SIR:—"A READER," in the June number of the HORTICULTURIST, page 291, asks for "facts and figures" on the efficiency of hot water boilers in statements addressed to you on the subject. Having sent you a communication on the saddle and conical boiler, which you had the kindness to publish in the May number, and to which he refers, I willingly state what I know on the subject.

As to the dimensions of the house, asked for by your correspondent, the slightest reflection will show him that there is no given rule on this point; in the present state of horticultural architecture, when no two men build alike, there can not be any. An amateur of means builds a house of taste and elegance, which is so far away from that which an intelligent practical gardener would build for his own use on the same area, that the practical man will heat his house and produce a better result with half the means which the owner of the more expensive structure would, and must of necessity, expend for his purpose.

I built my greenhouse three-quarter span, 130 feet long, 16 feet wide, 9 feet high in the centre, on the south side of my garden fence; back wall planked and filled in with brick on edge, 6 feet high, front wall two feet high, back rafters 4½ feet, front rafters 12 feet; sash bars on the fixed principle; ventilators over the ridge plate, as at Bridgeman's, 876 Broadway, New York; and yet practical men have told me that my house is not "half tight"—that to exclude the north wind and its consequences, I should have built the back wall of *concrete* eighteen inches thick, or a hollow brick wall of the same size. I know I could thus make a "tighter" house, but I know that the "practical men" are few in number who build alike, or pay the slightest attention to the laws of light and heat in horticultural buildings; and therefore it is, that the means that would heat one house, would not keep the frost out of another of the same size, in different hands.

A very skilful gardener in this city does business in a house 130 feet in length, of an L shape, 60 feet of which is span roof, 22 feet wide, 10 feet high; the remaining 70 feet is lean-to, 14 feet wide, and same height; the whole so loosely built as to do injustice to any mode of heating. It would do you good to walk into it in winter, in your flight from the wrath to come outside. He makes the water boil, and keeps a high temperature in this extent of house, *in times that try men's souls*, with No. 4 of the *saddle and conical boiler* and 526 feet of 4-inch pipe. The quantity

of coal burned from November to May was 8 tons, and when he had trimmed his lamp at night, he says he had no occasion to look to it until morning. I put this case as the worst I can find, against the saddle and conical boiler.

If your correspondent were a practical machinist, disposed to investigate matters every day under his eye, and engaged in the construction of boilers for horticultural purposes, I should most willingly submit to his consideration a few "opinions," a careful and intelligent investigation of which would lead to useful "facts and figures" touching his business; but as I take him to handle the hoe and rake as I do, with a view to oblige him I have called on Messrs. Weathered and Cherevoy, 117 Prince Street, New York, the makers and patentees of the saddle and conical boiler referred to, and they assure me they warrant their boilers with the following powers, assuming that the greenhouse is carefully and closely built, and not over 12 feet high. They also add that they have lately patented a boiler of greater power.

No. 5. Largest size, grate surface, 19 inches diameter, 283 square inches, will heat 800 feet of 4-inch pipe containing 434 gallons of water.

No. 4. Grate surface, 15 inches diameter, 176 square inches, will heat 500 feet of 4-inch pipe, 271 gallons of water.

No. 3. Grate surface, 12½ inches diameter, 122 square inches, will heat 300 feet of 4-inch pipe, 163 gallons of water.

No. 2. Grate surface, 9 inches diameter, 63 square inches, will heat 150 feet 4-inch pipe, 82 gallons of water.

No. 1. (Not yet constructed.)

To the makers of this very excellent boiler, I beg to refer any who wish further inquiry on the subject.

It may be useful to state, that 100 feet of 4-inch pipe contains 54 gallons of water; that 100 feet of 3-inch pipe contains 30 gallons; that 100 feet of 4-inch pipe is equal in effect to about 150 feet of 3-inch pipe, the capacity being in all cases in direct proportion to the square of the diameter of the pipe. Your obedient servant, B., OF BROOKLYN.

[In our next we shall give a letter on other boilers.—ED.]

EDITOR OF THE HORTICULTURIST:—I tried last fall, and again this spring, to secure a supply of Wilson's strawberries. The first hundred failed; of the second hundred, I have saved some fifteen. They were all from Rochester. So I am almost disheartened in the attempt at getting them from abroad. But, as I see that you are to have an exhibition of the Austin at the office of your valuable paper this season, I will have to call into requisition your judgment about its value. If the berry is really what it purports to be, and you think you can send me one dozen safely *by mail*, you will confer a favor by doing so at the right time.

I have a very fine *grape-vine*, which was taken from the roots of an old one which had been transplanted and died. The name I do not know. The bunches are long, heavily shouldered, bright red; the vine a luxuriant grower, a brownish color, leaves very large—lobed and sub-lobed—villous underneath, and very much wrinkled, and deep green on upper part. This vine bloomed last season very finely, and again this spring, but will *not set any fruit*. Why is it? It does not bloom for more than three weeks after my other vines. Let me know what is the matter, and how to remedy the evil.

Some of the very finest *nectarines* I have, when half-grown, *wilt* and fall off. I have a *Stanwick*, very young; it showed fine bloom, and set three *nectarines*, the largest of which, when nearly as large as a common hen's egg, wilted in forty-eight hours, without any apparent cause, and fell off: the other two seem to be doing finely. Why is this? The *Stanwick* seems to do well with me out-doors, better than a great number of other nectarines, and the finer peaches. But I do not understand this wilting of the Boston, Downton, and Stanwick. Why is it?

Yours truly, in great haste, M. S. FRIENON.

Columbia, May 26, 1860.

P. S.—Does the *striped bug*, that is so injurious to cucumbers and other vines, ever attack the nectarine? I find them in large numbers on the Boston, and the skin sometimes scarred. Is it these bugs? It is not the curculio.

[Only 15 out of 200 Wilson's Seedling! There must be something wrong with such results. What is the nature of your soil, and how did you prepare it?—We have seen the Austin, but think it would not suit you. It is large, but deficient in flavor.—We can not tell, from your description, what is the matter with your vine. Having been propagated from a fruitful vine, it ought to be fruitful like its parent. Are the flowers defective? Let us know *how*, and *where*, and in *what* you planted the vine.—The wilting and dropping of your nectarines we suppose to be caused by either the borer or the curculio, but probably the latter. But we suspect you have been applying some artificial fertilizer to your soil which has had much to do with all your difficulties.—Glad to hear that the Stanwick does so well with you; you can not plant anything better in that way.—The "striped bug" does sometimes attack both the Nectarine and the Peach. Try the Gishurst Compound on your insect enemies.—ED.]

Editor's Drawer.

PROGRESSIVE GARDENER'S SOCIETY.—This Society is doing a good work by its conversational meetings. The discussions thus far possess so much interest that we gladly make room for them, and hope they may be continued. The names of the officers we present elsewhere. The subject for discussion at the last meeting was *Manures*, and the following instructive essay was read by Prof. L. Stephens of Girard College.

The term manure is applied to all those substances which enrich the soil in those elements which contribute to support vegetation, and may perhaps with propriety, in a wider sense, apply also to those chemical agents which seem to liberate and render available to plants those fertilizing elements which already exist in the soil, but locked up in a state of insolubility, and may also embrace those substances whose application to particular soils improves their physical texture in such a way as to enable a crop to obtain abundant sustenance.

The organized tissues of all plants consist chiefly of four elements, three of which, in their free or uncombined state, are gaseous bodies viz., oxygen, hydrogen, and nitrogen, and the fourth, carbon, although in its simple state a solid, still in its union with oxygen forms a gaseous compound, carbonic acid, which is universally diffused, in the atmosphere, the water, and the soil. All of these elements, either as gaseous or liquid compounds, are universally diffused, and without the aid of man sustain the luxuriant growth of our forests and our prairies. Of these elements, three, oxygen, hydrogen, and carbon, constitute the vegetable tissue, or the entire framework of the plant, while nitrogen is invariably contained as an essential element in the seed, and appears to be indispensable to all vital action in the plant; for it is found not only in the seed, but in the cells of every growing part of the organism, as one of the constituents of that viscid liquid which lines the inner wall of the cell, and from which new cells derive their birth.

But besides these organic elements, there are found certain mineral constituents in the sap and cells of every plant, which are indispensable to its growth, strength, and health. These are potash, soda, lime, magnesia, oxide of iron, silica, phosphoric acid, sulphuric acid, and muriatic acid. While of the organic elements plants derive a large part of their supply from the water and the air, their mineral constituents must be derived wholly from the soil. Different crops require of these minerals different quantities and in different proportions. Thus, clover and

peas require a much larger amount of lime and less silica than grass or grain. And potatoes and beets require more potash and less sulphuric acid than turnips. Chemical analysis has fully proved that within a certain narrow range of variation, each crop must obtain from the soil its own particular proportion of these mineral constituents, and that the absence or the deficiency of any one of them will cause a failure of the crop. In the absence of manuring a cultivated field, the crops must derive their inorganic constituents from the natural disintegration and decay of the mineral of the soil by which they are brought into a state of solubility. These minerals are removed from the field with each successive crop, and in a limited period, longer or shorter, barrenness is sure to follow.

We come now to the question, What is the best manure to sustain the fertility of the soil? I answer, that for general application farm-yard manure must take the first rank as a fertilizer containing all the substances required to sustain vegetation. An artificial compound may be made to have the same fertilizing power as barn-yard manure, but, in order to do that, no one of its constituents must be lacking. Although the manufacturer may intensify the fertilizing power of his compound by concentration, he can not for general use improve the proportions of the ingredients of barn manure. The excellence of barn manure consists, of course, in the fact that, being derived from the varied food of domestic animals, it contains all the mineral elements which vegetation extracts from the soil, together with a good proportion of carbon and nitrogen. Moreover, the processes of animal digestion and secretion have again in a measure brought these mineral matters which had become fixed in the plant into a soluble state, and therefore again ready to contribute to vegetable nutrition. In this point of view it is evident that this manure must include both the liquid and the solid excrements. In fact, of the two, the liquid excrements are the most valuable, on account of the large amount of nitrogen contained and the entire solubility, though neither of the above constitutes a complete manure.

But although barn manure may be considered a complete manure from the fact that its continued application will sustain the fertility of a soil, still the degree of fertilization can be profitably increased by the additional use of animal manures from time to time. Flesh, blood, hair, bone, &c., are formed chiefly from those vegetable elements existing in the seeds and nutritious roots of plants; they are consequently by far richer in nitrogen, phosphoric acid, and sulphur, the distinctive elements of seeds, than is that part of the food of animals which is rejected in the form of excrements; and which, on the other hand, is richer in some of the mineral elements derived by the plants from the soil. To make, therefore, the animal manure a complete manure, it is only necessary to add to it those mineral matters in which it is deficient. Of all the fertilizing elements contained in manures, by far the most expensive and valuable is nitrogen, whether in the form of salts of ammonia or of nitric acid. The next most valuable ingredient is phosphoric acid, and the third in order is potash. If we estimate the relative efficacy of farm-yard manure and animal matter merely by the amount of nitrogen contained in them, we have the following scale of values according to Johnson:

Farm-yard manure—Nitrogen	½	per cent.
Flesh, "	3½	"
Fish, "	2½	"
Blood, "	3	"
Blood dried, "	12 to 13	"
Skin, "	8	"
Wool, Hair, and Horn, "	16	"
Bones, "	5 to 6	"

It must also be borne in mind that these animal substances are much richer in phosphoric acid than barn manure, and that wool, hair, and horn contain about five per cent. of sulphur, which answer valuable purposes in the nutrition of plants.

(To be continued.)

INSECTS INJURIOUS TO FRUIT-TREES.—At the recent Yale College Lectures, Dr. Fitch made the following interesting remarks on Insects Injurious to Fruit-Trees. He is certainly mistaken, however, in saying that but one slit is made on a fruit; we have often seen two, and no doubt others have. So, too, the statement that plum-trees the branches of which hang over water are exempt from the curculio, has no foundation in fact. We have examined a number of such trees, and found them invariably just as badly stung as others, except in some cases where other means of protection had been resorted to. It is a matter of every-day observation, that trees which overhang water are no more exempt from insects than others, and it may be safely assumed that the curculio has no such instinct as is here imputed to it.—ED.

There are at present known to us, in the United States, 60 different insects which prey upon the apple, 12 on the pear, 16 on the peach, 17 on the plum, 35 on the cherry, and 30 on the grape. Prominent among these is the plum weevil, or curculio, which Dr. Fitch stigmatized as the worst insect of our country; for though the midge is at present causing a greater amount of pecuniary loss, he thought its career would be like that of its predecessor, the Hessian fly, and that it would eventually be mastered and subdued by its parasite destroyers. Unlike the wheat midge, the curculio is a native insect of this country, which has now been known upwards of a century, during all of which time it appears to have gradually multiplied and increased its forces, without any important cessations or intervals in its ravages, no parasite destroyer of it having ever been discovered till within a few months past. It was first noticed by the botanists Collinson and Bartram, in 1746, as totally destroying the nectarines in and about Philadelphia, while the plums were but slightly molested. Their turn came next, however, and each subsequent investigator found it ravaging a different section of country. Notwithstanding the volumes written upon it, we do not to this day know where the curculio lives, and what it is doing for three-quarters of the year. All that is currently known of it is, that it is a small brown and white beetle, which makes its appearance on plum-trees when the young fruit is half grown; that it cuts a crescent-shaped slit upon the side of the fruit and drops an egg into the wound, from which egg a small white worm hatches, which burrows in the fruit, causing it to wilt and fall from the tree, whereupon the worm crawls into the ground to repose for two or three weeks during its pupa state; and that it comes out in the latter part of July a beetle, like the parent which six weeks before stung the fruit. This, which is currently supposed to be the main and essential part of its history, Dr. Fitch judges to be quite the reverse; and he is convinced that if there were no fruit for the curculio to eat, it would still thrive to its entire satisfaction.

In New England and New York, the beetle may be found abroad the last of March, if the weather is fine, though usually it is not till about the middle of May; and in a week or two after it becomes quite common. It is found standing or slowly walking upon the trunk and limbs of the plum, cherry, apple, the wild thorn-apple, the butternut, and other trees. Those on the butternut are plumper than the others. From this time onward, till cold weather returns, we continue to meet with it, and late in autumn it is to be seen on the flowers of the golden-rod as plentifully as at any time through the season. When the young fruit appears in June, it attacks it with the skill of an epicure, selecting the choicest varieties first. Its crescent-shaped incision is the signal of destruction, as was the crescent banner of the Moslem of old. The slit made, one egg is deposited; and but one slit is made on a fruit. The peach, plum, and apple, when stung, wilt and fall; but the cherry and thorn-apple do not. This is because the larger fruit contains a sufficient amount of nourishment to mature the worm; while the smaller ones must grow on to elaborate the quantity of food which the worm needs. It is a fact not generally known, that apples are attacked by the plum curculio, yet so great are the losses of this particular fruit, that the lecturer gave it as his opinion that the poorer yield of our orchards now, as compared with heretofore, is due to this insect. The wilted fruit literally covers the ground, under many trees, the fore part of July. Cut into this fruit, and you will find the same curculio worm therein as in the fallen plums.

From the fact that this insect comes forth three weeks before there is any fruit ready for it to eat, and remains after the fruit is gone, Dr. Fitch thinks that it has other places of refuge to cradle its young besides the young fruit. In fact, it is well ascertained that it breeds in the black knot excrescences on plum and cherry-trees, as eagerly as in young fruit. Hence it has been thought to cause the excrescences. But having examined the black knots fully in every stage of their growth, Dr. Fitch says decidedly they are not produced by this or any other insect, nor are they a vegetable fungus, but are purely a local disease of the limbs, in which the bark and wood are swollen and changed to a spongy substance, but without any of the juiciness which belongs to young fruit. This disease has some analogy to the cancer in the human body, and its cure is the same, namely, the knife, removing the diseased part totally, as soon as discovered.

With Melsheimer, Dr. Fitch believes that the curculio breeds in the bark as well as the fruit of trees, for on a specimen of pear-wood sent him some years ago, his microscope revealed crescent cuts in the bark, like those on young fruit, in which little maggots were lying side by side, ready to eat their way onward when the warmth of spring revived them.

Within six months D. W. Beadle, of St. Catharine's, C. W., has sent the Doctor a curculio parasite, which is furnished with a bristle-like sting, with which it pierces the black knot to where the curculio larva lies, and deposits an egg in the body of the latter, to hatch and gradually kill it. The late David Thomas, of Union Springs, New York, first recommended knocking the plum-tree to remove weevils. The remedy is partial, but not infallible. Mr. A. P. Cumings, of New York, recommends to syringe the trees with a mixture of four gallons lime-water, four gallons tobacco-water, one pound whale-oil soap, and four ounces sulphur. The tobacco and soap in solution Dr. Fitch thinks good, but doubts whether the other ingredients add anything to the value of the mixture. There is much testimony to substantiate the fact that trees, whose limbs project over water, always bear fine crops of plums, the curculio being aware that its young will drown if the fruit drops into the water.

Another important insect is the apple-tree borer, a long grub which resides under the bark and bores into the solid wood, sometimes below, but usually slightly above the ground, and is two or three years in getting its growth. A few years since, an agent of one of our large nurseries canvassed Washington county, N. Y., disposing of trees to the amount of three thousand dollars. More than half of these trees have since been destroyed by this borer; a direct loss of $5,000 from this insect in that single county, in addition to the labor lost in planting and nursing these perished trees. This must not be confounded with the borer in the roots of peach-trees, which is the progeny of a moth, while this is the young of a brown, long-horned beetle, having two white stripes the whole length of its back. Specimens of this, as of the other insects spoken of by the lecturer, and of the wood as perforated by it, were passed from hand to hand through the audience. The common soft soap rubbed on the bark of the trees the latter part of May, prevents the attack of this insect. If this be neglected, and the borers have made a lodgement in the bark, their presence is usually shown by particles like sawdust, which they thrust out of their burrows, and when discovered they should be cut out with a knife or chisel without delay.

How the Dutch Cauliflowers are Grown.—A German newspaper, the Landwirthschaftliches Centralblatt, gives the following as the method by which the Dutch obtain their cauliflowers, so famous for size and delicacy. In autumn they dig deep some ground that has not been manured; at the beginning of May they sow the large English cauliflower upon a bed of manure, and cover it with straw mats at night. When the young plants are three or four inches high, they harrow the ground that had been prepared the autumn before, and with a wooden dibble 18 inches long, they make holes about 10 inches deep, at proper distance apart, and enlarge them by working the dibble round until the hole at the top is about three inches in diameter. They immediately fill these holes with water, and repeat this three times the same

day. In the evening they fill them with sheep's dung, leaving only room enough for the young plant, which they very carefully remove from the bed of manure and place in the hole with a little earth. Directly afterwards they give them a good watering, and as soon as the sun begins to dry them, they water them again. When the head is forming, they pluck off some of the lower leaves of the plant, and use them to cover the head.

NEW METHOD OF GRAFTING.—Horace Everett, of Council Bluffs, describes a method of grafting, common in Tennessee, that may be worth knowing in other localities, and which he says is not described in any fruit book that he has read. It is described as follows: "A long smooth shoot or limb is selected, cut from the tree, and a sharp iron wedge driven through the limb, every four or five inches. Upon withdrawing the wedge, the graft is inserted, allowing the shaved end to extend an inch or so through, so that when a graft had been inserted in every split, the limb looked like a long stick, with the grafts extending from it at right angles, a shoot of four feet having about twelve grafts. This stick or limb is then buried in the ground, the tops of the grafts only being allowed to come above the surface. During the past year the grafts took root, and grew from 12 to 36 inches. The next fall the limb was taken up and was sawed apart, between the grafts, thus leaving every graft with a portion of the limb adhering to it in the shape of a cross. I planted these grafts, and the trees grew and throve well. It is certainly a very cheap and economical stock for grafting."

DUNN'S SOLID MARKING-INK PENCILS.—We consider this the most effective invention that has yet been offered to the gardener for marking his plant-labels. The writing is black and indelible, the labels requiring no other preparation than previously rubbing them with a damp finger. The label may be either of wood, parchment, bone, or zinc. The pencil requires no cutting, but the writing-points are raised or lowered in a mode similar to those in Mordan's lead-pencil cases. It is equally efficacious for marking linen, and when our readers remember the trouble and difficulty of obtaining clean and efficient quill pens for applying marking-ink, we think that they will not be slow in patronizing "Dunn's Solid Marking-Ink Pencil." The case and point are only eighteen pence.

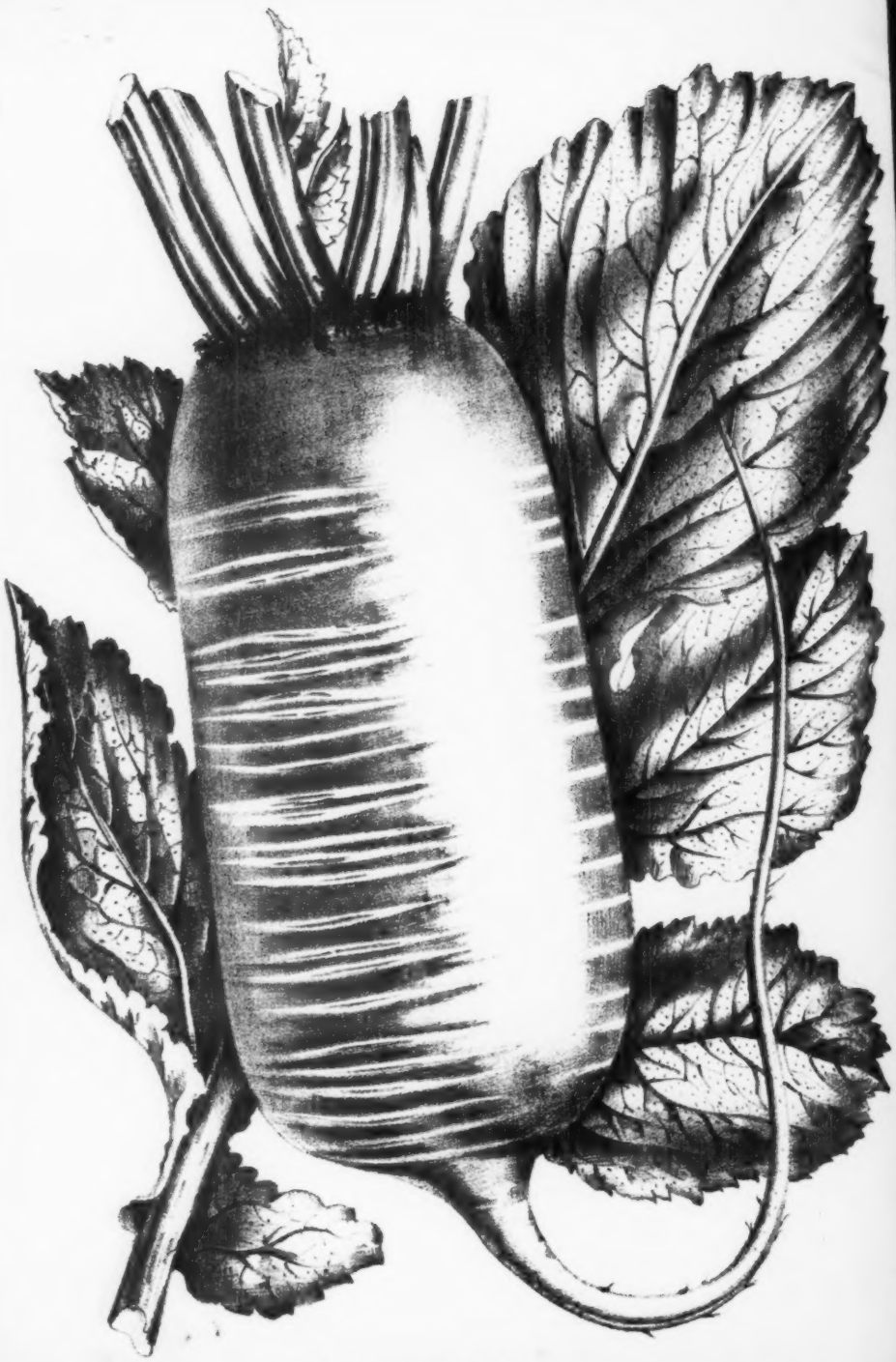
We have no doubt Mr. Dunn will advertise this very clever and useful invention, and in the meantime we publish the following letter we have received from him:

"At last I have the pleasure to forward you one of my Solid Marking-Ink Pencils, which after eighteen months' hard work have been brought to their present form. The Cedar cases in which I at first tried them proved a sad mistake; the oil contained in the wood softened the points and caused the pencil to block up, and this I did not discover until I came to make them in bulk. It is a curious fact, that in the Cedar cases the oil will not act on them if carried in the pocket; whereas, if the same point is put in a Cedar case and left in a cool place, the oil condenses on the point and softens it in the course of two or three days.

"The white wood case contains no oil, and some I have had filled in for three months are as good as ever. I tried an old point the other day, one of the first I made fourteen months ago, and found it much improved by age. This was very satisfactory, as some of my chemical friends predicted a decomposition of the points; but facts prove the contrary.

"No preparation is required for marking sticks, &c.; the slightest damping is sufficient, and they will mark dry; and if you want to fix the writing at once, hold the stick to the fire just below scorching heat.

"It will also mark permanently on linen, &c., dry, or slightly damped with water or the tongue, but not so black as with the tartrate of potash. I could put them up in white wood as a common pencil, but there is a great objection to cutting them—they mark the thumb, and the cuttings mark anything they fall on. I have also tried to cheapen them, by using a common slide, but they do not work so well as with the screw, and as this is a patent case, I am obliged to pay a high price for it; but you will understand they refill for 1*s*. I send you a specimen written on calico, which has been washed several times."—*Cottage Gardener.*



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